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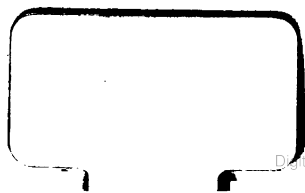
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A
GENERAL VIEW

OF THE

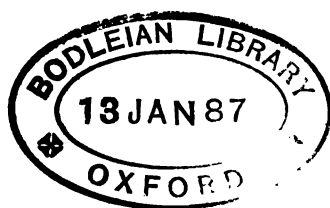
Materialistic Philosophy.

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A General View of the Materialistic Philosophy.

CHAPTER I.

Materialistic Philosophy amongst the Ancients ; Rise and Spread of Christianity and Ecclesiasticism ; Mohammedanism and Arabian Philosophy and Science ; The Mediæval Period and Scholasticism.

The instructive series of Lectures delivered in many of our Towns under the auspices of the Gilchrist Trustees, embodying the most recent results and observations in the domain of the natural and physical sciences, have probably caused this reflection in the minds of some who followed their course—To what do they tend ? What is likely to be their broad and general effect upon the popular mind ? Taken together with the attention which is now occupied by the literature of Materialism ; the dissemination of this literature far and wide by means of our Free Public Libraries—representing, as it is one of the functions of these to do, all intellectual phases of human inquiry—and the consequent spread and growth of Materialistic opinions amongst all intelligent ranks and classes of society,—their latent tendency insensibly suggests to the popular mind a Materialistic view of Nature, and of Man's place in Nature. It is true they have not been characterised by the freedom of speculation displayed by Professor Tyndall in his well-known Address, delivered at Belfast in the year 1874, as President of the British Association for the Advancement of Science—speculative conclusions have been barely hinted at in these lectures. Truth, however, and wherever Truth led, has been professedly their ultimate object. Pilate's sceptical question naturally arises here : What is Truth ? The inquiry is a very ancient one. The purpose of the following pages, undertaken solely for the general reader, is to suggest that the methods and canons of what is commonly known as Materialism are not to be hastily accepted as the key of that reasoned thought to which we give the name of Philosophy.

To this end the editor has collected from the most recent authorities, as Lange, Lewes, Tennemann, Draper, &c., what he trusts may be a serviceable General View, mainly expository, and as brief as he could well make it, of the various theories that have been started from the time of Democritus, upwards of four centuries before the Christian era, in the course of European Materialism and the Philosophy connected therewith. For Materialism may be regarded as one thing, and Philosophy as another. By Materialism is meant those conclusions respecting Being which rest upon external observation, experiment, and rigid induction alone. By Philosophy, that free play of the recipient and reflective faculty, both within and upon itself as well as upon external nature, whose last and highest reaches elude the scientific analysis, and lie wholly in the realm of Intuition.

Materialism is as old as Philosophy. The cities of Asia Minor, and the Doric colonies of Sicily and Magna Græcia, were distinguished for prosperity and mental cultivation in those centuries that immediately precede the brilliant period of Hellenic intellectual life. In the higher ranks of society in these places, from men, wealthy, influential, and with a wide experience gained from travel, Philosophy arose. Thales, Anaximander, Xenophanes, Heraclitus, Pythagoras, Anaximenes, and Empedocles are amongst the earliest names we meet. We shall see, however, in the course of our inquiry that the modern Atomic theory of Materialism has been gradually developed from the Atomism of Democritus. We may consider the following propositions as the essential foundations of Democritus's metaphysic. (1). Out of nothing arises nothing: nothing that is can be destroyed. All change is only combination and separation of atoms. (2). Nothing happens by chance, but everything through a cause, and of necessity. (3). Nothing exists but atoms and empty space; all else is only opinion. (4). The atoms are infinite in number, and of endless variety and form. In the eternal fall through infinite space, the greater, which fall more quickly, strike against the lesser, and lateral movements and vortices that thus arise are the commencement of the formation of worlds. Innumerable worlds are formed and perish successively and simultaneously (5). The variety of all things is a consequence of the variety of their atoms in number, size, figure, and arrangement: there

is no qualitative difference of atoms. They have no "internal conditions," and act on each other only by pressure and collision. (6). The Soul consists of fine, smooth, round atoms, like those of fire. These atoms are the most mobile, and, by their motion, which permeates the whole body, the phenomena of life are produced.

Of all the great principles underlying the Materialism of our own time, one only is wanting in Democritus; and that is the abolition of all teleology, or doctrine of final cause, by the principle, so unreservedly set forth by Ernst Haeckel, of the development of the *purposeful* from the *unpurposeful*. What Lamarck and Charles Darwin, relying altogether upon a wide extent of positive knowledge, have achieved for our generations, Empedocles offered to the thinkers of antiquity—the simple and penetrating doctrine, that adaptations preponderate in nature just because their qualities enable them to select, combine, and perpetuate themselves, while what fails of adaption naturally perishes. But Empedocles of Agrigentum cannot be described as a Materialist, because with him force and matter are fundamentally separated. The forces are independent of matter. These forces are two, Love and Hate, or Attraction and Repulsion; and accordingly as each preponderates, so are the circumstances of terrestrial life fortunate or unfortunate. In common with many Pythagoreans he laid great stress on the existence of Dæmons (of intermediate order and power between Gods and men) some of whom had been expelled from the Gods in consequence of their crimes, and were condemned to pass a long period of exile, as souls embodied in various men or animals. He laments the misery of the human soul in himself as well as in others, condemned to this long period of expiatory degradation before it could regain the society of the Gods. None of the remaining fragments of Empedocles are more remarkable than a few in which he deplores the impossibility of finding out any great or comprehensive truth, amidst the distraction and suffering of our short life. About the name of Empedocles, as about that of Democritus, there has gathered a mass of myth and legend, much of which is due to a mastery of natural forces, which seemed very wonderful to his contemporaries. He was, in fact, a man of universal endowments and acquirements. Expounder of nature, rhetorician, poet, physician, prophet, magician,—his earnest demeanour, his fiery eloquence, the fame of his ceremonies, imposed upon the people, who

revered him as a God. It is to be noticed that his efforts were directed to the amelioration of the condition of the common people. He died in the Peloponnesus, conjecturably in exile.

Materialistic modes of thought dominated the philosophy of the fifth century before Christ. It was about the middle of this century that a spiritual movement was inaugurated by Socrates, which, after undergoing various modifications in the systems of Plato and Aristotle, influences the succeeding century. Aristocles, the son of Ariston and Perictione, surnamed Plato, as we are told, from the breadth of his forehead or of his shoulders, was born at Egina, 427 B.C. His family was noble, in the sense attached to that word at Athens. It was about the twentieth year of his age when his acquaintance with Socrates began. He served actively in the military duties that were required from the Athenian youth. The treatment of Socrates by the Government so revolted him that he not only withdrew from public functions, but in his writings concealed his own personality. In no one of the "Dialogues" does Plato address us in his own person. These Dialogues were composed during the fifty-one years of his life after the death of Socrates. They are professedly addressed only to select and prepared minds. The hatred that Socrates had experienced in consequence of his extreme publicity of conversation and speech, would appear to have determined Plato's mind against the risk of encountering the fate of his master. He therefore propounds his views behind the veil of discussions, under the names of his associates. The "Apology" and the "Crito" are, perhaps, the only dialogues that give the real words of Socrates himself.

It is difficult to give any adequate description of the vastness and profundity that distinguish the writings of Plato—of a mind that conceived the human spirit to retain, in a present state of lost perfection, reminiscences of its former state and of its former knowledge. To

"Unsphere
The spirit of Plato, to unfold
What worlds, or what vast regions hold
The immortal mind, that hath forsook
Her mansion in this fleshly nook,"*

transcends the reach, and is beyond the scope of our task. Plato's attempts to combine Poetry and Reason resulted in his doctrine of Ideas. He maintains that the existence of

* "*Il Penseroso*."

things, underlying all their appearances, rests (and in this he is the intellectual progenitor of Berkeley and Kant) finally in their essential, their inner nature, their Idea; which may be likened to that which existed in the mind of God, prior to the creation of the worlds. That alone is constant, unchangeable, unconditioned.

These Platonic Ideas, because of their deep opposition to the philosophy which springs from experience, are for us of especial importance. They possess universal significance; they rest on the broad basis of our whole psychical organisation. Both methods are necessary stages of human thought, and although Materialism may, as compared with Platonism, always maintain its special position, yet it may be that the whole picture of the world which this latter affords stands nearer to the unknown truth: has deeper relations to the life of the emotions, to art, to the moral functions of mankind.

It is admissible that these Platonic conceptions have been, down to our own days, only hindrances and will-o'-the-wisps for the mastery of phenomena by the understanding, and by sure methodical science. But, just as the human spirit will never be content with the world of understanding which an exact empiricism might afford us, so the Platonic philosophy will ever remain the first and most elevated type of the exaltation of the spirit above the unsatisfying patchwork of knowledge. And we are as much justified in this exaltation on the wings of imaginative speculation, as in the exercise of any function of our mental and physical faculties. Only we must, once for all, clearly comprehend that we have here not Knowledge but Poesy, even though this poesy may, perhaps, symbolically represent to us a real aspect of the essential nature of all things, the immediate apprehension of which is denied to our understanding.

Aristotle, Plato's successor, was dissatisfied with the doctrine of Ideas, and, having mastered the whole philosophical and historical knowledge of his age, addressed himself to the exploration of Nature. His endeavour to collect into a harmonious system the whole sum of the learning and positive knowledge of his time was a gigantic intellectual achievement, the influence of which was predominant even in the remote mediæval period. The difference between these two great men is striking. Goethe calls Aristotle a man of an architectural genius, who seeks a solid basis for his building, but looks no further; who describes an immense circuit for its

foundations, collects materials from all sides, arranges them, lays one above the other, and thus ascends in a regular form pyramidally ; while Plato, like an obelisk, nay, a flame, seeks the heavens. Aristotle was critical, scrutinising whatever came within the range of his comprehensive mind, while Plato brings everything into connection with his elevated view of the human soul. From the school of Aristotle appeared the physicist Strato of Lampsacus, whose doctrine is scarcely distinguishable from purely Materialistic views. All existence and life he referred to the inherent plastic forces existent in matter

At the first glance we might suppose that there is no more consistent Materialism than that of the Stoics, who explain all reality to consist in *bodies*. The matter of the Stoics possesses the most various forces. The force of all forces, however, is the Deity, which pervades and moves the whole universe with its influence. Their matter is thoroughly pervaded and not merely influenced by Soul. Their God is identical with the world ; and yet he is more than mere self-moving matter—he is the fiery reason of the world. Anthropomorphism and optimism profoundly regulate the Stoic system, the true character of which must be described as “Panthestic.” The Stoics had this doctrine of the freedom of the will : Moral accountability is involved in the fact that conduct flows from the will, and so from the innermost and most essential nature of man ; but the manner in which each man’s will shapes itself is only a result of the necessity and divine predestination which govern all the machinery of the universe, down to the smallest detail. For his thought also man is responsible, because even our judgments are shaped by the influence of our moral character. The Soul, which is bodily in its nature, subsists for a certain time after death ; wicked and foolish souls, whose matter is less pure and durable, perish quicker ; the good mount to an abode of the blest, where they remain till they are resolved in the great conflagration of the universe, with everything that exists, into the Divine Being. The human soul, virtues and emotions, are *bodies*. In the thought of the absolute unity of the universe did Zeno form in the Stoa at Athens a School distinguished for a succession of noble thinkers and lovers of virtue ; a school which became memorable for the influence it acquired, and for its resistance to vice and tyranny.

A rival school of philosophy at Athens commenced and

extended itself, side by side, with that founded by Zeno. Epicurus was born at Samos, about the year 340 B.C. He studied industriously the writings of Democritus, which supplied him with the corner-stone of his cosmology, the doctrine of atoms. He was at Athens at the time of the downfall of liberty. Thebes had perished, and Demosthenes lived in exile. When Alexander died suddenly at Babylon, Epicurus left Athens, to return only in the maturity of his years. There he bought the Garden, in which he taught and dwelt with his disciples. He believed in the Gods in some uncertain manner, but denied their interference with the course of nature. He taught that everything in nature is governed by an eternal order, which regulates the interchange of origination and destruction. As soon as death comes, then we exist no more. Peace of soul and freedom from pain are the only proper pleasures, and these are, therefore, the true aim of existence. "Is it prudence or folly in thee, O man! when thou hast not tomorrow in thy power, to procrastinate thy making thyself happy till the Future, and, in the meantime, lose the opportunity of the present, of which only thou art certain? It is not perpetual feasting and drinkings; it is not the love of and familiarity with beautiful boys and women; it is not the delicacies of rare fishes, sweet meats, rich wines, nor any other dainties of the table that can make a happy life: but it is Reason, with Sobriety, and, consequently, a serene mind."*

In other respects Epicurus's theory of nature is almost entirely that of Democritus. Like the earlier philosopher, he denies the existence of intrinsic qualities in the atom. With Epicurus the soul is a genuine constituent of the body, an *organ*.

When Epicurus died, the new theatre of Greek intellectual life was opened at Alexandria. Grammar found at this period an Aristarchus of Thrace; history, a Polybius and a Manetho; geometry, a Euclid and an Archimedes; and astronomy, Hipparchus.

The second corner-stone of modern science is Experiment. This too, had its birth in Alexandria, and in its schools of medicine. A school of great influence grew up which made Experience its grand principle, and great progress was the reward of its efforts. It was not the want of internal vitality, but the course of history, which speedily put an end to this activity; and we may say that the renaissance of the sciences

* Epicurus's *Morals*, London, 1670, pp. 4, 24.

was chiefly a revival of Alexandrian principles. Nor must we undervalue the results of positive research in antiquity. We here leave out of sight grammar and logic, history and philology, whose great and permanent achievements none will controvert. We will rather point out that in those very sciences, in which the last few centuries have attained such an unequalled development, the preparatory achievements of Greek inquiry were of high importance.

Whoever contemplates the Homeric world with its ceaseless miracles, the narrow space of its earth surface, and its naive conceptions of the heavens and the stars, must confess that the capable among the Greeks had entirely to remodel their notions of the universe. Of the wisdom of the Indians and the Egyptians only fragments reached them, which, without answering efforts of their own, could never have attained to any serious development. With the Romans, apart from the fact that they received their first scientific impulse from the Greeks, it was, if possible, still worse. The nascent Græco-Roman culture found scarcely the barest rudiments of astronomy and meteorology, no trace of physics and physiology, not a suspicion of chemistry. In a word, there was still wanting the very beginning of natural science—Hypothesis.

At the termination of the short and brilliant career of ancient civilisation, we find a complete change. Positive natural science, directed by the precise investigation of particular facts, has already completely separated itself from the speculative philosophy of nature, which seeks to reach beyond the bounds of experience, and rise to the ultimate causes of things. The exact sciences, by a brilliant elaboration and perfecting of mathematics, had secured that instrument, which, in the hands of the Greeks, the Arabs, and the Teutono-Romanic people of modern times, step by step, brought about the most magnificent practical and theoretical results. The books of Euclid constitute still, in the country of Newton, after more than 2,000 years, the foundation of mathematical instruction. Astronomy, under the guidance of subtle and complicated hypotheses as to the motion of the heavenly bodies, accomplished incomparably more than those primitive diviners of the stars, the peoples of India, Babylon, and Egypt, had ever succeeded in attaining. A very nearly exact calculation of the positions of the planets, of eclipses of the sun and moon, an accurate representation and grouping of the fixed stars, does not exhaust the list of what was achieved; and even the root idea

of the Copernican system, the placing the sun in the centre of the universe, is to be found in Aristarchus of Samos, with whose views Copernicus was very probably acquainted. Long before Ptolemy the spherical shape of the earth had been generally recognised. The researches of Aristotle and his predecessors had diffused a mass of information on the fauna and flora of more or less distant countries. Accurate description, anatomical examination of the internal structure of organic bodies, paved the way for a comprehensive survey of the forms which, from the lowest upward to the highest, were conceived as a progressive realisation of formative forces, which end by producing in man the most perfect of earthly beings. When the elder Pliny attempted in his encyclopedic work to represent the whole field of nature and art, a nearer insight into the relations between human life and the universe was already possible.

The physics of the ancients embrace a notion, built upon experiment, of the main principles of acoustics, of optics, of statics, and the theory of gases and vapours. The mighty buildings, war engines, and earth-works of the Romans were based upon scientific theory. Scientific medicine, culminating in Galen of Pergamos (A.D. 131), had already explained the bodily life in its most difficult element, nervous activity. Sömmering, in the last century, found the theory of the brain almost where Galen had left it. The ancients were acquainted with the importance of the spinal marrow, and thousands of years before Sir Charles Bell they had distinguished the nerves of sensibility and movement; and Galen cured paralysis of the fingers, to the astonishment of his contemporaries, by acting upon those parts of the spine from which the implicated nerves took their rise. No wonder, then, that Galen partly regarded ideas as results of bodily conditions.

When we behold knowledge thus accumulating from all sides—knowledge which strikes deep into the heart of nature, and already pre-supposes the axiom of the uniformity of events—we must ask the question: How far did ancient Materialism contribute to the attainment of this knowledge and these views? And the answer to this question will, at first sight, appear very curious. For not only does scarcely a single one of the great discoverers—with the chief exception of Democritus—distinctly belong to the Materialistic school, but we find amongst the most honourable names a long series of men belonging to an utterly opposite, idealistic, and even enthusiastic tendency.

And special attention must here be paid to mathematics. Plato is the intellectual progenitor of a line of inquirers who carried the clearest and most consequent of all sciences, mathematics, to the highest point it was to reach in antiquity. The Alexandrian mathematicians, including the Neo-Platonists, belonged almost wholly to the Platonic school. A similar tendency proceeded from Pythagoras, whose school produced in Archytas a mathematician of the first order. Even Aristarchus of Samos, the forerunner of Copernicus, clung to Pythagorean traditions. The great Hipparchus, the discoverer of the precession of the equinoxes, believed in the divine origin of the human soul. Pliny, Ptolemy, and Galen, without any exact system, leaned to pantheistic views. Galen, who was more of a philosopher than any of them, is an eclectic, and is acquainted with the most various systems, yet he shows himself least inclined to the Epicurean, by assuming immediate truths of the reason which are previous to all experience. We see, easily enough, that the ideal element with the conquerors of the sciences stands in the closest connection with their inventions and discoveries. It is a result of the complex organisation of man, that, in many cases, the roundabout course, through the play of the imagination, leads more quickly to the apprehension of higher truth than the sober effort to penetrate the closest and most various disguises.

There is no room to doubt that the Atomism of the ancients comes incomparably nearer to the essential reality of things, so far as science can understand it, than the Numerical theory of the Pythagoreans, or the Ideal theory of Plato; at least it is a much straighter and directer step to the existing phenomena of nature than those vague and hesitating philosophemes which spring almost wholly out of the speculative poesy of individual souls. But the immeasurable love for the pure forms in which all that is fortuitous falls away, that tendency of the spirit to the supersensuous, helped to open the laws of the sense-world of phenomena on the path of abstraction. Although we may assign great importance to the subjective impulse, yet we must not for a moment lose from view how it is just this fantastic stand-point which has so long hampered the progress of knowledge, and still continues to do so. The beginning of clear methodical observation of things is, in a sense, this first true beginning of contact with things themselves. The value of this tendency is objective. The starting point of Greek scientific activity is to be sought in

Democritus, and the rationalising influence of his system—in the resolution of the varying and changeful universe into unalterable but mobile particles. Although this principle, most closely connected as it was with Epicurean Materialism, has only attained its full significance in modern ages, yet it obviously exercised a very deep influence upon the ancients also. It is indeed true that the Atomism of to-day, since chemistry has been worked out, stands in very much more direct connection with the positive sciences. But the connecting of all these otherwise inexplicable events in nature, of becoming and perishing, of apparent disappearance, and of the unexplained origin of matter with a single pervading principle, was, for the science of antiquity, the veritable Columbus's egg. The constant interference of gods and demons was set aside by one mighty blow, and whatever speculative natures might choose to fancy of the things that lay behind the phenomenal world, the World itself was exposed to view, and even the genuine disciples of a Plato and a Pythagoras experimented or theorised over natural occurrences without confusing the world of Ideas and of Mystic Numbers with what was immediately given to the senses.

This confusion, so strongly manifested in some of the modern philosophers of Germany, first appeared in classical antiquity at the era of the Neo-Platonic and Neo-Pythagorean extravagances. But the whole thought of Greek antiquity, from its beginning to the period of its complete destruction, was under the influence of a Materialistic element. The phenomena of the sensible world were, for the most part, explained out of what was perceived by the senses, or represented as so perceived. The school of the Epicureans remained amongst all the ancient schools the most fixed and unalterable. Revived in the 17th century by Gassendi, and variously modified by Descartes, Newton, and Boyle, the doctrine of elementary corpuscles, and the origin of all phenomena from their movements, became the corner-stone of modern science.

The work which secured for the Epicurean system, ever since the revival of learning, a powerful influence on modern thought was the poem of the Roman, Lucretius Carus. Among all the peoples of antiquity, none, perhaps, was by nature further removed than were the Romans from Materialistic views. Their religion had its roots deep in superstition; their whole political life was circumscribed by superstitious forms. Art and science had little charm for them, and they were still

less inclined to bury themselves in the contemplation of nature. A practical tendency, more than any other, governed their life. They valued dominion more than wealth, glory rather than comfort, and triumph more than all. Their virtues were those of courage, fortitude, temperance. The Roman vices were, at least in the beginning, not luxury and wantonness, but hardness, cruelty, and faithlessness. Their power of organisation, in conjunction with their warlike character, had made them great. For centuries after their first contact with the Greeks, there continued that antipathy which springs from difference of character. It was only after the defeat of Hannibal that Greek art and literature forced their way to Rome. At the same time came luxury and wantonness. The conquered nations crowded to their new capital, and brought about a confusion of all the elements of the old Roman life. The great more and more acquired a taste for culture and refined sensuality; generals and governors made spoil of the works of Greek art; schools of Greek philosophy and rhetoric were opened; even old Cato himself learned Greek, and, when once the language and literature were known, the influence of philosophy could not remain inactive. In the last days of the Roman Republic, every educated Roman understood Greek; the young nobles pursued their studies in Greece; and the best minds endeavoured to form the national literature on Greek models.

At that time, among all the schools of Greek philosophy, there were two which especially captivated the Romans—the Stoic and the Epicurean; the first, with its blunt pride in virtue; the second, more in accord with the spirit of the times and their state of progress; but both—and this marks the Roman character—of practical tendency and dogmatic form. Brutus the Stoic, and Cassius the Epicurean, together imbrued their hands in Cæsar's blood.

Titus Lucretius Carus was born in the year 99, and died in the year 55 B.C. It appears that in the confusion of the times, he sought some stay for his inner life, and found it in the school of Epicurus. His great poem was undertaken to make a convert to this school of his friend, the poet Memmius. He found nothing in the universe but atoms and void. All existing things are either combinations of these two, or an event of these. Time has no separate existence, but is the feeling of a succession of occurrences; the events of history are only to be regarded as the accidents of bodies and space. Infinite divisibility of atoms is impossible. If these were not

minute indestructible particles, then all things might arise without fixed law and order. There are no definite limits to space. Weight or gravity is an essential property of the atoms. A determinate direction in the movement of the atoms makes up the universe. All the adaption to be found in the universe, and especially in organic life, is merely a special case of the infinite possibilities of mechanical events. He denies the idea of Design. Sensation belongs not to the individual atoms, but to the whole, and the proof adduced by Lucretius has some humour. It would not be a bad thing, he thinks, if atoms could laugh and weep, and reflect sagely on the composition of things, and ask in their turn what were *their* original constituent parts. The soul of Lucretius is not immortal. If the bouquet of wine disappears, or the perfume of an unguent is dissipated into the air, we observe no loss of weight; just so it is with the body when the soul has disappeared. To the question, however, How non-sentient atoms produce sensation by intermixture and collision, Lucretius gives no answer.

From the decay of Paganism, and the decline of philosophy, Christianity arose. The disappearance of the ancient civilisation in the early centuries of the Christian era is an event the serious problems of which are in great part still unexplained. And yet, so much at least is certain, that from the lower and middle strata of the population alone is this mighty revolution to be explained. In antiquity, amidst the progress of rationalism, of knowledge, of method, the intellectual aristocracy broke away from the masses. The lack of a thoroughly popular education must have hastened and intensified this separation. The increasing intercourse of nations began to produce among the superstitious classes a confusion of religions. At Rome, whither the conquered nations flocked, there was soon no creed that did not find believers, while there was none that was not scoffed at by the majority. Contempt of the popular belief was assumed as a mask for inner hollowness, utter absence of belief and true knowledge. The utterly uneducated mobs shared in the towns the character of characterlessness with the great in their semi-culture. Thence ensued, in those times, that practical materialism—the materialism of ordinary life.

When effort is directed not to transitory enjoyment, but to a real perfecting of our condition, when the energy of ma-

terial enterprise has ultimate principles in view, then there ensues that giant progress which makes a mighty people. But of quite another character was the materialism of Imperial Rome, which repeated itself at Byzantium, Alexandria, and in all the capitals of the Empire. Had Julius Cæsar lived, the whole course of the history of the civilized world might have been changed. Only a year before his assassination, he had entered upon a policy of broadening the Roman rule with the object of placing the provincials upon a footing of equality with the Roman citizen. He had added eminent provincials to the senatorial rank. He had commenced to reform and codify the law. He sought to form libraries in the great towns. Everywhere he encouraged men of science. Large engineering plans of drainage and navigation occupied his attention. Such were Cæsar's employments a year before his death. The political system of his successors was not upon so broad a footing. It lacked that great principle of the utilisation, for the common advantage, of national resources, which ennobles a materialistic tendency. The masses under the Empire eventually became drunk with the double intoxication of vice and the religious mysteries. In those times prevailed the Neo-Platonic and Neo-Pythagorean systems, in which many nobler elements of the past were overpowered by fanaticism and Oriental mysticism. Plotinus was ashamed that he had a body, and would never name his parents. Here we have the height of the anti-materialistic tendency—an element that became mightier in the field to which it properly belonged—that of Religion.

In a political sense, Christianity is the bequest of the Roman Empire to the world. It established a new criterion of truth, which, under the form of ecclesiastical councils, developed a system which supplied the intellectual and spiritual wants of Europe for nearly a thousand years. But we must ever distinguish between Christianity and ecclesiastical organizations; between the former, coming immediately to the heart of man as the gift of God; and the latter, as the product so to speak, of human exigencies, and displaying, in its long course, those infirmities that history teaches us attach to all human efforts. For many years Christianity manifested itself as a system enjoining three things—toward God veneration, in personal life purity, in social life benevolence. As it increased in numbers and influence, it began to exhibit political tendencies, a disposition to form a government within the government, an empire within the empire. And these tendencies it has never since lost.

During the first three centuries after Christ, all sorts of religions flourished in wild luxuriance and variety, from the purest to the most abominable shapes. By the side of the wanton festivals of Bacchus, the sweet and alluring mysteries of Isis, there silently spread wider and wider, the love of a strict and self-denying asceticism. Christianity, with its wonderfully fascinating doctrine of the kingdom that is not of this world, gave the most admirable support to these views. The religion of the oppressed and of the slave, of the weary and heavy-laden, attracted also the rich, who could no longer be satisfied with luxury and wealth. And so with the principle of renunciation was allied that of universal brotherhood, which contained new delights for the heart seared by selfishness. The longing of the wandering and isolated spirit after a close tie of community and a positive belief was satisfied; and the firm coherence of the believers, the imposing union of communities ramifying everywhere through the wide world, effected more for the propagation of the new religion than the mass of miracles that was related to willingly-believing ears. Miracle was, in short, not so much a missionary instrument as a necessary complement of faith in a time that set no measure to its love or its belief in miracles. In this respect not only did priests of Isis and magicians compete with Christianity, but even philosophers appeared in the character of miracle-workers and God-accredited prophets. The miracles and oracles of Apollonius of Tyana, were partly believed in by Lucian and Origen.

But the result of all this was to show that simple and consistent principles can work a lasting miracle—that miracle which gradually united the scattered nations and creeds around the altar of the Christians. Christianity, by preaching the gospel to the poor, unhinged the ancient world. The stern legal idea of the Romans, which built order upon force, and made property the immovable foundation of human relations, was met by a demand, made with incredible weight, that one should renounce all private claims, should love one's enemies, sacrifice one's treasures, and esteem the malefactor on the scaffold equally with one's self. A mysterious awe of these doctrines seized the ancient world, and those in power sought in vain by cruel persecutions to repress a revolution which overturned all existing things, and laughed at the prison and the stake. In the sufficiency of the salvation which ONE who had suffered death on the cross had brought down from heaven

as a gracious gift from the Eternal Father, this sect conquered country after country, and was able, while clinging to its main principles, to press into its service the superstitious ideas, the sensuous inclinations, the passions and conceptions of the heathen world, since they could not be wholly destroyed. The place of old Olympus, with its wealth of myth, was occupied by the saints and martyrs. Gnosticism constituted the elements of a Christian philosophy. Christian schools of rhetoric were opened for all those who sought to combine the ancient culture with the new belief.

From Tertullian's able work, the "Apology or Defence of the Christians against the accusations of the Gentiles," written by him at Rome, during the persecution of Severus, we see how humble Christianity was while it was suffering persecution and struggling for existence. A century later we see what it became when in possession of imperial power. Great is the difference between Christianity under Severus and Christianity under Constantine. Many of the doctrines which at the latter period were pre-eminent, in the former were unknown. The reign of Constantine marks the epoch of the transformation of Christianity from a religion into a combined political and ecclesiastical system, in which the Scriptures, *as interpreted by the Fathers and the Councils of the Church*, were to be taken henceforth as the sole Divine authority for the beliefs of mankind. Despite the notorious violent controversies that raged between the Bishops, the Fathers, and the Councils of the Church during the 4th and 5th centuries, everyone was directed to think as the ecclesiastical authority ordered him. Astronomy, geology, geography, anthropology, chronology—and indeed all the various departments of human knowledge—were made to conform to it.

Among the cultivators of Platonic philosophy whom the times had spared, was a beautiful young woman at Alexandria, Hypatia, daughter of Theon the mathematician; who not only distinguished herself by her expositions of the Neo-Platonic and Peripatetic doctrines, but was honoured for the ability with which she commented on the writings of Apollonius and other geometers. Her lecture-room was crowded by the wealth and intellect of the City, and so comparisons became instituted between the philosophical discourses of Hypatia, and the theological deliverances of Cyril, the bishop. Cyril at length determined to remove what he considered this great reproach, and overturn what appeared to be the only

obstacle in his way to uncontrolled authority in the City. We are reaching one of those moments in which general principles embody themselves in individuals. It is Greek philosophy under the form of Hypatia; ecclesiastical ambition under that of Cyril. Their destinies come into collision. As Hypatia goes forth to her academy, she is assaulted by Cyril's mob—an Alexandrian mob of many monks. Amid their fearful yells she is dragged from her chariot, and stripped naked in the public street. Haled into an adjacent church, she is there treated with the grossest barbarities, and finally killed by blows with a club. Then her lifeless body is dismembered by these miscreants, who finish their infernal atrocities by scraping the flesh from the bones with oyster-shells. And thus, in the 414th year of our era, was the position of philosophy in the intellectual metropolis of the world determined.

From the simple and austere discipline of the early Church was thus developed a hierarchical despotism. The bishops gathered unto themselves riches, and led an arrogant and worldly life; the rabble of the great cities became intoxicated with hatred and fanaticism. The church festivals speedily resembled in their wantonness and ostentation those of the decaying heathenism, and appeared bent upon destroying the life-germs of the New-Religion. But it was not so destroyed. Struggling against these foreign forces, it made its way. While cunning, treachery, and cruelty helped to found the Christian State, the thought of the equal calling of all men to a higher existence touched the innermost heart of the world, and remained the basis of popular development.

What Judaism and Christianity had in common was Monotheism. Only when we have a liberal theory of the harmonious guidance of the whole universe by one God, does the cause and effect connection between things become conceivable. The Mosaic creed was the first of all religions to conceive the idea of creation as a creation out of nothing. It is a clear and honest theory. It contains so open and direct an affirmation of what all thought is incapable of picturing, that weaker and more reserved propositions must feel ashamed beside it. Christianity first requires that God shall be conceived as free from any physical shape, and strictly as an invisible spirit. Above all, however, we must bear in mind that the emphasis of the Christian doctrine by no means rested originally on its great theological principles, but much rather on the sphere

of moral purification through the renunciation of worldly desires, on the theory of redemption, and on the hope of the second advent of Christ. This characteristic and widespread belief respecting the second coming, held by the early Church, and by the New Testament writers in particular, was not fulfilled. Eighteen centuries have passed away, and that which the faithful expected to see within their own generation has never come; and the belief which was the most powerful inspiration of the first preachers of the Gospel, and long formed, in fact, the characteristic substance of their Christian message, has practically dropped by degrees out of sight. In the early ages it was a psychological necessity that as soon as the immense success of the Christian doctrine had restored religion generally to its ancient privileges, heathen elements in mass forced their way into Christianity, so that it speedily acquired a rich mythology of its own. And so, not merely Materialism, but all consistent monistic Philosophy, became, for hundreds of years to come, an impossibility.

The lamp of science was not, however, suffered to die out. It now fell into the hands of the Arabians, under the influences of the third of the great Monotheistic religions, Mohammedanism. The founder of that religion had cut the Gordian knot of all metaphysical speculation respecting the nature of Deity, of Creation, of the origin and existence of Sin,—topics which had exercised the ingenuity of the ancient philosophers and of the early Fathers of the Church,—by ignoring and disdaining them, and making his Heaven to consist of the highest conceivable forms of human delight. In the midst of the wrangling of the Christian sects, in the incomprehensible jargon of Arians, Athanasians, Nestorians, Eutychians, Monothelites, Monophysites, Mariolatrists, and an anarchy of countless disputants, there sounded through the world, not the voice of the intriguing majority of a Council, but the battle-cry, "There is but one God." And when the Saracen armies went joyfully to the encounter of death with that cry, under a belief that by so doing they were purchasing the delights of the Paradise promised to them, it is not surprising that all Asia and Africa fell away from the divided Christians.

Within twenty-five years after the death of Mohammed (A.D. 632), the patronage of learning had become a settled principle of the Mohammedan system. Under the Caliphs of Bagdad this principle was thoroughly carried out. The famous Haroun Alraschid (A.D. 786-808) invited learned men from

all countries to his kingdom, and paid them princely salaries. He caused the works of the most famous Greek authors to be translated into Arabic, and spread abroad by numerous copies. Under his successors, excellent schools were established at Bagdad, Bassora, Bokhara, and Cufa; and large libraries at Alexandria and Cairo. At a time when learning found scarcely anywhere a place of rest and encouragement, the Arabians employed themselves in collecting and diffusing it in the three great divisions of the world. They brought the results of these pursuits along with their religion into Spain, which, during the dark ages, was the most enlightened country in Europe; and to their schools at Cordova and Granada all those resorted from every country who wished to be initiated in the sciences. From the teachers of these schools the modern world has its algebra and arithmetic, such as it has now in common use; certainly one of the most useful boons ever conferred upon mankind. The Arabians revived the study of medicine. Astronomy they especially cultivated. Their fine and industrial arts ministered to their habitual life. Their architecture especially was distinguished by a delicate invention, wholly unallied with the gloomy and terrifying expression of the northern architecture of Europe.

When the Moorish invasion of France was stopped by Charles Martel, at Tours (A.D. 732), and the great seven days battle resulted in the defeat of the invaders and the death of Abderahman, their leader, compelling their retreat across the Pyrenees, Gibbon, in his narrative of these great events, remarks that their "victorious line of march had been prolonged above a thousand miles from the rock of Gibraltar to the banks of the Loire—a repetition of an equal space would have carried the Saracens to the confines of Poland and the Highlands of Scotland."

Ideas respecting the nature of God necessarily influence ideas respecting the nature of the soul. The Eastern Asiatics from the earliest times had adopted the conception of an impersonal God, and, as regards the soul, its obvious consequence, the doctrine of emanation and absorption. Thus the Vedic theology is based on the acknowledgment of a universal Spirit pervading all things. Both the Vedas and the Institutes of Menu affirm that the soul is an emanation of the All-pervading Spirit, and that it is necessarily destined to be re-absorbed. They consider this Spirit to be without form, and that visible

Nature, with all its beauties and harmonies, is only a shadowy veil or garment of God. Vedaism developed itself into Buddhism (B.C. 250) which has become the faith of a great part of the human race. This system acknowledges that there is a Supreme Power, but denies that there is a Supreme Being. It contemplates the existence of Force, giving rise as its manifestation to matter. It adopts the theory of emanation and absorption. In a burning taper it sees an effigy of man—an embodiment of matter, and an evolution of force. If we interrogate it respecting the destiny of the soul, it demands of us what has become of the flame when it is blown out, and in what condition it was before the taper was lighted. Was it a nonentity? Has it been annihilated? It admits that the idea of personality which accompanies us through life may not be instantaneously extinguished at death, but may be lost by slow degrees. On this is founded the doctrine of Transmigration. But at length re-union with the universal Spirit takes place; Nirvana is reached, oblivion is attained, a state that has no relation to matter, space, or time, the state into which the departed flame of the extinguished taper has gone, the state in which we were before we were born. This is the end that we ought to hope for; it is re-absorption in the universal Force—supreme bliss, eternal rest.

It was through Aristotle that these doctrines had been first introduced into Eastern Europe. In the later period of the Alexandrian school, they had exercised a dominating influence. Philo the Jew, Plotinus, Porphyry, and Proclus had based their philosophy and teaching upon them, and illustrated these doctrines by the practice of their lives. Plotinus had taught the devout how to pass into a condition of ecstasy, in which condition the soul temporarily loses its individual consciousness, and has a foretaste of absorption into the universal soul. Porphyry had bewailed his own unworthiness, saying that he had been united to God in ecstasy but once in eighty-six years, whereas his master Plotinus had been so united six times in sixty years.

From the Alexandrian Greeks these ideas had passed to the Arabian philosophers. Let us now listen for a moment to one of the most powerful of Mohammedan writers of the eleventh century.—

“God has created the spirit of man out of a drop of his own light; its destiny is to return to him. Do not deceive yourself with the vain imagination that it will die when

the body dies. The form you had on your entrance into this world, and your present form, are not the same ; hence there is no necessity of your perishing, on account of the perishing of your body. Your spirit came into this world a stranger ; it is only sojourning in a temporary home. From the trials and tempests of this troublesome life, our refuge is in God. In re-union with him we shall find eternal rest—a rest without sorrow, a joy without pain, a strength without infirmity, a knowledge without doubt, a tranquil and yet an ecstatic vision of the source of life and light and glory, the source from which we came.” So run the words of the Saracen philosopher, Al-Gazzali (A.D. 1058-1111).

Is there, then, a vast spiritual existence pervading the universe, even as there is a vast existence of matter pervading it—a spirit which sleeps in the stone, dreams in the animal, awakes in man ? Does the soul arise from the one, as the moving body arises from the other ? Do they in like manner return, each to the source from which it has come ?

Averroes, of Cordova, in the 12th century, gathered together these speculations of the Eastern and Alexandrian schools, revived the study of Aristotle, and delivered the results to the West in a wide range of literary activity. He affirms the eternity of the world and of matter, in opposition to the Christian doctrine of creation. God and the world run into each other in pantheistic fashion. The only universal part of man is the soul or reason, which is not individual, but one and the same in all beings that partake of a soul.

Philosophy among the Arabs thus took the same direction that it had taken throughout the far East. Its whole spirit depended on the admission of the indestructibility of matter and force. It saw an analogy between the gathering of the material of which the body of man consists from the vast store of matter in nature, and its final restoration to that store, and the emanation of the spirit of man from the universal Intellect, the Divinity, and its final re-absorption.

But the lower orders of Mussulmen, under the instigation of the orthodox religious party, now commenced to entertain a fanatical hatred against learning. Averroes himself was expelled from Spain in his old age. He died A.D. 1198.

What, however, the Mohammedans rejected, was received into Italy, Germany, England, and France. Averroism found favour in the eyes of the schools of mediæval philosophy. Here again the orthodox sounded an alarm. They said it des-

troyed all personality, conducted to fatalism ; denied creation, revelation, the Trinity, the efficacy of prayers, alms, and litanies. So, too, with the Jews in France and Spain. They committed the works of their great writer, Maimonides (A.D. 1139-1205), who had espoused this doctrine, to the flames. But Averroism long maintained its ground. At length the Church took decisive action against it. The Lateran Council, A.D. 1512, condemned the doctrines as detestable. The last Vatican Council (1870) has also anathematized them. It must be borne in mind, however, that these opinions are held by a majority of the human race.

We now see a glimpse of the way which Averroism prepared, in the middle ages, for the new philosophy of Materialism in Europe. But beside this, we are indebted to the Arabian civilisation of the middle ages for achievements in the sphere of positive inquiry, of mathematics, and the natural sciences. The brilliant services of the Arabians in the field of the natural and physical sciences are not sufficiently recognised. It was these studies particularly which, connecting themselves with Greek traditions, again made room for the idea of the regularity and subjection to law of the course of nature. This happened at a time when the degeneracy of belief in the Christian world had come to regard everything as possible, and nothing as necessary. In these studies was implied, as a pre-supposition, the belief in a regular progress following eternal laws. And this belief has formed one of the most powerful springs in the whole development of culture from the middle ages to modern times. In their schools of medicine, in their studies of the animal and vegetable worlds, everywhere, in short, in organic nature, the fine sense of the Arabians traced not only the particularities of the given object, but its development, its generation, and decay—just those departments, therefore, in which the mystic theory of life finds its foundation. Humboldt affirms that the Arabians are to be considered as the proper founders of the physical sciences in the signification of the term which we are now accustomed to give it.

So flowed the sources on all sides to form the mighty stream of modern intellectual life, along which, under numerous modifications, we have to pursue the course of our examination.

When Christianity had lost the most interesting countries over which her influence had once spread, Africa, Egypt,

Syria, The Holy Land, Asia Minor,—she fell back upon Europe. Charlemagne, grandson of Charles Martel, cemented the alliance with the Church entered into by his father Pepin, and was crowned by Pope Leo the third at Rome on Christmas-day A.D. 800, as "Emperor of the West." Though unlearned himself, no one appreciated better than Charlemagne the value of knowledge. He laboured assiduously for the elevation and enlightenment of his people. He collected together learned men; established places of teaching; erected noble buildings; organised the trades, and gave to his towns a police. After his death, his successors made closer union with the ecclesiastical power, which gradually acquired that moral and spiritual supremacy that enabled the Church to dominate the crowned heads of Europe and all their subjects.

To enable us to understand the mission of the Church in these times, we must advert to the rise and progress of the monastic orders. As early as A.D. 370, St. Basil, bishop of Cæsarea, incorporated the hermits and cenobites of his diocese into one order. One hundred and fifty years later, St. Benedict, under a milder rule, organised those who have passed under his name, and found for them occupation in suitable employments of manual and intellectual labour. In the ninth century, another Benedict revised the rule of the order, and made it more austere. Offshoots arose, as those of Cluny, A.D. 900; the Carthusians A.D. 1084; the Cistercians, A.D. 1098. The Augustinians were founded in the eleventh century. The influence to which monasticism attained in the course of three centuries was immense. Of these orders were the highest dignitaries of the Church; together with emperors, kings, and nobles. Vast numbers of authors and learned men were produced by them. It was mainly by the monasteries that the peasant class of Europe was pointed out the way of civilisation. To see the lands around these noble buildings turned from a wilderness into a garden; to see labour exalted and ennobled by holy hands; to see the wealth lavished upon shrines and altars—these were things that arrested the attention of the barbarians of Europe, and led them on to civilization.

The Scholastic philosophy which was dominant in the ecclesiastical system of the middle ages began by dealing with scanty, and at the same time, much corrupted traditions. The chief portion of its materials was derived from the works of Aristotle. Charlemagne was honoured with a theological epistle in which the "nothing" out of which God created the

world is explained as an actually *existing entity*, and that for the extremely simple reason that every name must refer to some corresponding thing. Here, then, was opened at the very outset of philosophical studies a wide source of school controversy. Whether abstractions of the mind represent independent existences, or, in other words, realities; or whether they are merely in the mind itself, and are only names—this was the question that divided the mediæval school-men into two camps,—the Realists and the Nominalists. The doctrine of Aristotle was that man, as the highest product of creation, carries within himself the nature of all the lower stages. From this the school-men derived three independent elements of human existence, of which man has the first in common with the plant, as growth and multiplication; the second in common with the animal, as sensation, motion and appetite; while the last alone is immortal, viz. :—the reason.

On the rise of the mendicant orders, Scholasticism received a great impulse through Thomas Aquinas, the Dominican, and Duns Scotus, the Franciscan, founding rival schools, which wrangled for three centuries. These disputes have ceased to possess any but an historical interest. A man who in this age can read with enjoyment of mind the works of an Abelard or an Aquinas, must have a native affinity for purely dialectical ingenuity. We are no longer perplexed by their problems, but we are interested in the fact that such problems did once perplex the most eminent minds.

We must not forget, however, that to Scholasticism we owe the emancipation of Philosophy from the trammels of Theology. The Church was dominant, and its Theology had to be dissolved by metaphysics before science could gain a hearing. It was Scholasticism which acted as the solvent. Something, also, may be said in its favour as an art of disputation. It made Paris for many years into a sort of Athens. The diploma of philosophy was given there. From the remote corners of Britain and the fastnesses of Calabria, from Spain and Germany, from Italy and Poland, came thither the young clerks who felt within them the restlessness of thought.

Of its many renowned teachers only a few names have now a familiar sound. Its controversy, commencing in the middle of the ninth century with the name of John Scotus, an Irishman—hence the surname of *Erigena*,—may be said to have exhausted itself with the Englishman, William Occam, in the middle of the fourteenth century—a Franciscan monk,

a disciple of Duns Scotus, like him, a Nominalist, and the most effective champion of the later Nominalism. We may regard the later Nominalism as the beginning of the end of Scholasticism, as preparing the way again for Materialism, and for a deliverance from the usurpation of idle words in speculation, and for a renewal of the connection of our thoughts more with things than traditional expressions and word-play. Nominalism was more than a mere opinion of the schools, like any other. It was really the principle of scepticism asserting itself against the whole mediæval love of authority.

In the place of positive achievements, the domination of Scholasticism in the sphere of the sciences resulted only in a system of notions and terms. Nevertheless, its formulas formed a common element of intellectual intercourse for the whole of Europe. One man, however, deserves to be signalised as pursuing, in the thirteenth century, the experimental sciences in the modern spirit and practice. Roger Bacon, a Franciscan monk (A.D. 1214-1292), was the chief of a small group of independent inquirers, who, under the example and encouragement of Robert Grossetete, bishop of Lincoln, kept aloof from the prevailing disputation of words, and addressed themselves to mathematics and the physical sciences. He was acquainted with Greek, Arabic, Hebrew, and Chaldaic. He tells us that he had spent 2,000 livres in conducting experiments. His fame was such that Pope Clement IV.—notwithstanding the suspicion of heresy that attached itself to Bacon—privately desired him to send the book which he had heard Bacon was preparing, and urged him to do it secretly and hastily. He grew poor. His superiors forbade him to teach his pupils; imprisoned him on bread and water if he ventured to instruct some curious brother; forbade his writing, and destroyed his books. Yet his spirit was victorious over all obstacles. In eighteen months he had composed and written out for the Pope the “Opus Majus,” “Opus Minus,” and the “Opus Tertium.” The fate of the works written under such disadvantages has been pitiable. Too much in advance of their age to be appreciated, they have only in quite modern times been rescued from the neglect and destruction too inevitably attending manuscripts. He died at the age of seventy-eight, a disappointed and thwarted man. Let us remember what he says in his third letter to Pope Clement: “It is on account of the ignorance of those with whom I have had to deal that I have not been able to accomplish more.”

CHAPTER II.

The Renaissance of Science and Philosophy ; The Rise of Modern Science and Philosophy ; Kant and his Successors.

In estimating the influences that preceded the renaissance of Science and Philosophy in Europe from the close of Scholasticism, the chief incidents to be considered are the restoration of Greek literature in Italy ; the formation of modern tongues from the vulgar dialect ; and the invention of Printing. These, joined to the moral and intellectual influences at that time predominating, led to the great movement known as the Reformation. Philosophical discussion commenced to be popular in Italy. Petrus Pomponatius published a book in the year 1516 on the Immortality of the Soul. The Church took offence at the work, and the author expressed his submission to its judgment after this manner : There are *no* natural proofs of immortality, and it rests, therefore, solely on revelation. This equivocal character of the relation between faith and knowledge is, in many ways, a characteristic and constant feature of the period of transition to the modern freedom of thought. Already in the year 1348, at Paris, Nicolas de Autricuria had been compelled to make recantation of several doctrines, and, amongst others, this : That in the processes of nature there is nothing to be found but the motion of the combination and separation of atoms.

To the Italian movement of the 16th and 17th centuries must be ascribed the revival of the monistic philosophy. The elder Scaliger was one of the reforming thinkers. Vanini was burnt by the Church at Toulouse in the year 1619, on account of the extreme freedom of his speculations. Telesius had previously suffered long persecutions from the same source. Campanella was kept for twenty-seven years in strict confinement, and died in 1639. With this last philosophic thinker and poet, the external world is a revelation of the Divine Being. His sonnets (recently translated into English by J. A. Symonds), display an energetic mind. The world is there depicted as an animal. It lives :—

“ Deem you that only you have soul and sense,
While heaven and all its wonders, Sun and Earth,
Scorned in your dullness, lack intelligence :
Fool ! what produced you ? These things gave you birth,
So have they mind and God.”

Campanella drew a picture of an ideal human society in his work "The City of the Sun;" and he represented this ideal as the aim of the historical development of humanity.

But while theology was holding dominion over the sphere of mind, and violent controversies drowned the voice of calm judgment, rigid inquiry was quietly laying in the province of external nature an impregnable basis for an entirely revolutionised theory of the universe.

In the year 1543 appeared, with a dedication to the Pope, the book on the "Orbits of the Heavenly Bodies," by Nicolas Copernicus. Within the last few days of his life, the gray-headed inquirer received the first copy of his book, and then in contentment departed from the world. What now, after the lapse of three centuries, every school-child must learn, that the earth revolves upon its own axis round the sun, was then a great, and, despite a few forerunners, a new truth, diametrically opposed to the general consciousness. "The earth moves" speedily became the formula by which belief in science and the infallibility of the reason was distinguished from blind adherence to tradition.

One of the earliest and most decided adherents of the new system was the Italian, Giordano Bruno. Pythagoras, Plato, and Lucretius were his masters in Philosophy. He taught that the infinity of forms under which matter appears proceeds from the inward potency of matter, rather than is produced in it by a kind of external fashion; that matter contains all forms, and, since it unfolds what it carries concealed within itself, it is, in truth, all nature, and the mother of all living things. Hence Bruno may be considered among the philosophical writers as intermediate between Averroes and Spinoza. It is not to be disputed that he anticipated Spinoza in his conception of the *immanence* of God in nature; that, in very truth, God and the universe are the same; and that what we are permitted to see is the vesture or garment of the Eternal. Such is the nature of the doctrine to preach which Bruno became a homeless wanderer and a martyr. Suspected of heresy; obliged to flee,—from that time forward his life was unsettled and marked by a long chain of persecutions and hostilities. He stayed in turn at Geneva, at Paris, in England, and in Germany, at last to venture on the fatal step of returning to his native land. In the year 1592, at Venice, he fell into the hands of the Inquisition. After many years' confinement, he was condemned at Rome,—still unbowed and firm in his

convictions. After being degraded and excommunicated, he was handed over to the secular authorities with the request that they would "punish him as mercifully as possible, and without shedding of blood," the well-known formula which meant that he was to be burnt. When his sentence was announced to him, he said: "I suspect you pronounce this sentence with more fear than I receive it." On the 17th February, 1600, he was burnt in the Campofiore at Rome.

For some few years the Church had rest. But in 1632 Galileo ventured on the publication of his work entitled "The System of the World," its object being the vindication of the Copernican doctrine. He was summoned before the Inquisition, and was declared to have brought upon himself the penalties of heresy. He was compelled to abjure solemnly the doctrine of the movement of the earth; was afterwards committed to prison, and there treated, during the remaining ten years of his life, with great severity.

It was reserved for the first half of the seventeenth century to reap the fruits of the great emancipation which the Renaissance had secured for the most various departments of man's intellectual life. In the first decades of the century, Francis Bacon made his appearance, towards its middle came Descartes, his contemporaries were Gassendi and Hobbes, whom we must regard as the true revivers of a Materialistic Philosophy.

Among all philosophical systems, Bacon places that of Democritus highest. He asserts in his praise that his school had penetrated deeper than any other into the nature of things. Without the assumption of atoms, nature cannot be explained. Whether final causes operate in nature cannot be definitely decided; at all events, the inquirer must confine himself to efficient causes only. Final causes, he says, are "vestal virgins; they bear no fruit." We are restrained from designating Bacon as strictly the restorer of the Materialistic Philosophy, by the circumstance that he fixed his attention almost exclusively upon method, and that he expresses himself upon the most important points with equivocal reserve. The absence of real positive science in Bacon; the most frivolous dilettanteism in his own scientific experiments; his rejection of the Copernican system; his doubtfulness whether Galileo's exam-

ination of the heavens with a telescope could be of any advantage ; his ignoring the discoveries of Kepler of the planetary movements in the solar system ; his hostility to Gilbert's writings on magnetism ; his indifference towards Harvey's discovery of the circulation of the blood—these are points enough to display Bacon's scientific character in as unfavourable a light as his personal and political character. In reference to the human soul, the point around which all philosophical controversies turned in the seventeenth and eighteenth centuries, Bacon was at bottom a Materialist. In fact, he did not at all recognise the conceivableness of an immaterial substance. But if we reflect that the entire sum of the idea of the soul from the Materialistic point of view is due to the comparison between the living and the dead body, and that the ignorance of even the physiological phenomena in the dying body is not without support to the theory of a "visionary soul,"—that is, of that *more subtle man* who is supposed in the popular psychology to be present as the native force in the inside of the man—we shall see in this single point a contribution of some importance.

Descartes, if an ingenious thinker, was not of those great spirits who sacrifice themselves for their race. In disposition, he was timid to servility. Even-tempered, placid, studious to avoid offence, he was ever in alarm lest the Church should conceive his speculations heretical. Taking the celebrated "Cogito, ergo Sum," as his starting-point, there can be no doubt that his system, if consistently carried out from his fundamental principle, must have led to an Idealism in which the whole external world appears as mere phenomena, and only the Ego has any real existence. But Descartes holds an honourable place in mathematics,—a science whose precision Bacon could not endure—and he applied to the phenomena of nature the standard of number and geometrical figure. As to the general basis of his theory of external nature, Descartes was not an adherent of vigorous atomism ; he denied the conceivableness of the atoms. Even if there are smallest particles which cannot possibly be any further divided, yet God must be able to divide them again, for their divisibility is still constantly conceivable. So he substitutes for the atoms small round corpuscles, which remain, in fact, quite as unchanged as the atoms, and are only divisible in thought, that is, potentially. In this, Descartes reminds us that Scholasticism was not wholly dead. In his metaphysic, he relied upon the facts of consciousness. His conceptions of God and the soul are arguments of

their corresponding real existence. His criterion is, therefore, an individual criterion at bottom, and his grounds of certitude are necessarily confined to beings like himself. Thus the doctrine of Innate Ideas is the groundwork of Descartes' metaphysical system. What it lacks at bottom, is exactly what Kant achieved—the establishing of a tenable connection between a *materially*-conceived nature and an idealistic metaphysic, which regards the whole of nature as a mere sum of phenomena in an Ego, which is, as to its substance, unknown to us.

When we attribute to Gassendi in particular, the revival of an elaborate Materialistic philosophy, we lay especial stress upon this: That he drew again into light, and adapted to the circumstances of the time, the fullest of the Materialistic systems of antiquity, that of Epicurus. His thorough philological and historical training equipped him with a knowledge of all the systems of antiquity. It might, indeed, appear hazardous to make the orthodox Catholic priest, Gassendi, the propagator of modern Materialism; but Materialism and Atheism are not identical, even if they are related conceptions. Epicurus himself sacrificed to the Gods. The men of science of the seventeenth century had acquired, through long practice, a wonderful skill in keeping upon a formal footing of friendliness with theology. Descartes, for example, introduced his theory of the development of the world from small particles with the observation, that, of course, God created the world at one time. But when he is once launched upon the scientific theory, then this development hypothesis is alone visible; it best harmonises with the facts, and fails in no single point. But the rehabilitation of Epicurus, and the exposition of his doctrine, required great caution in Gassendi. Is Epicurus a heathen? so too was Aristotle. If Epicurus attacks superstition and religion, he was right, for he knew not the true religion. By the advice of his friends, Gassendi burnt some of his writings. A brief description of these has been preserved to us. In them, not only was the Copernican theory advanced, but also the doctrine of the eternity of the world which had been drawn from Lucretius by Giordano Bruno. He also formally recommended the Epicurean theory of morals. In the year 1643, he published his "*Disquisitiones Anti-Cartesianæ*," a work as delicate and polite as it is thorough and witty. He showed, with regard to the "*Cogito, ergo Sum*,"

that it was impossible to realise an abstraction from what was given in sense ; that in a concrete psychical act thought can never be separated from sense elements : that existence may just as well be inferred from any other action as from thinking ; that Descartes confuses the logical and psychological processes, and that, when we clearly discriminate them, the whole argument colliapses. It becomes practically necessary to assume, to postulate the *I*. The world Gassendi regarded as one ordered whole, the only question is as to the nature of the order. There is no form without a material body, and this is the durable substratum, while forms change themselves and go. Matter is therefore indestructible, and it is incapable of being produced, and no body can arise out of nothing, although this does not go to deny the creation of matter by God. The further expositions of atoms, of void ; the denial of infinite divisibility, the motion of the atoms, and so on, chiefly follows Epicurus. Gassendi identifies the weight or gravity of the atoms with their inherent capability of self-determined motion. This motion has also been from the beginning bestowed by God upon the atoms, of which a finite number are created, so as to form the seeds of all things. Thereupon commenced that alternation of generation and dissolution that exists now. The evolution and dissolution of things is nothing but the union and separation of atoms. All change is only movement in the constituents of a thing, and hence the simple substance cannot change, but only continue its movements in space. The weak side of Atomism, the impossibility of explaining sensible qualities and sensations out of atoms and space, was appreciated by Gassendi ; for he discusses this problem at great length, and endeavours to strengthen the arguments of Lucretius. At the same time, he admits there is something left unexplained, but this point he takes care not to examine too closely, because it would lead him away from the sphere of experience. This much is certain, that the Atomism of our own day has, step by step, been developed from the theories of Gassendi and Descartes, and so its roots reach back to Democritus.

Between the Englishman, Thomas Hobbes of Malmesbury, and Gassendi, there was considerable personal intercourse and mental sympathy. The problem, as put by Hobbes, was : What kind of motion can it be that produces the sensation and imagination of living beings ? The determination of the tendency of Hobbes was distinctly shown in the dedication of his

treatise "De Corpore," to the Earl of Devonshire, 1655. There it is said that the doctrine of the earth's diurnal revolution was the invention of the ancients, but that both it and astronomy, that is, celestial physics, springing up together were, by succeeding philosophers, *strangled with the snares of words*. And, therefore, the beginning of astronomy, except observations, is not to be derived from farther time than from Nicolas Copernicus, who, in the age next preceding the present, had revived the opinion of Pythagoras, Aristarchus, and Philolaos. After this Galileo had opened the gate of natural philosophy (physics) and, lastly, the science of man's body had been founded by Harvey, through his doctrines of the circulation of the blood and the generation of animals. To the whole domain of ecclesiastical theology, Hobbes does not conceal his aversion. With peculiar consistency, he denies any absoluteness of difference between good and evil, virtue and vice. Man cannot live without hurting the interests of others, since his own interest compels him to struggle for the advantage of his own. So long as he keeps clear of the law, he is at liberty to prey upon the weaker individual. The denial of the freedom of the will, is, as a matter of course, in Hobbes's system. In politics, fear and compulsion alone can make his egoistical rabble of human beings maintain any form of constitution, or observe any laws. The ruler, therefore, must be an egoistic despot, to restrain the very much more harmful egoism of all his subjects. Every revolution that is strong enough to establish itself is justified. Might is Right, in the most vulgar sense. The name of Hobbes's chief work, "Leviathan," is only too significant of this monster of a State, which like a God upon earth, ordains law and judgment, right and possession, at its own will, and even arbitrarily determines the ideas of good and evil, and, in return, assures to all those who bow the knee before it and do it sacrifice, protection for their lives and property. His real view of religion is trenchantly expressed in the following definition: "Fear of power invisible, feigned by the mind or imagined from tales publicly allowed, RELIGION: not allowed, SUPERSTITION." As to his theory of *external nature*, Hobbes absolutely identifies the idea of body with that of substance. Everything is body that, independently of our thought, occupies a portion of space, and coincides with it. The permanent element which persists through all change is "body," which only changes its accidents, that is, is now conceived by us one way and now in another. The images or sense-qualities, by means

of which we perceive the thing, are not the thing itself, but a motion originating within us. Human sensation is nothing but the motion of corporeal particles, occasioned by the external motion of things.

The Materialism of Hobbes met with a formidable opposition from Ralph Cudworth, who, in 1678, brought out his *Magnum Opus*, the "True Intellectual System of the Universe, wherein all the Reason and Philosophy of Atheism is refuted, and its Impossibility Demonstrated." Cudworth, in the preface of his work, sets forth to show: "That all things in the world do not float without a head or governor; but that there is a God, an omnipotent understanding Being, presiding over all. Secondly, that this God, being essentially good and just, there is something in its own nature immutably and eternally just and unjust; and not by arbitrary will, law, and command only. And, lastly, that we are so far forth principles or masters of our own actions, as to be accountable to justice for them, or to make us guilty and blameworthy for that we do amiss, and to deserve punishment accordingly."* The history of the Atomic philosophy is narrated at great length by Cudworth, and with vast erudition. He has the merit of seeing very clearly that the Atomic theory itself, or what he calls the Atomic physiology, had no natural or even necessary connection with the Atomic atheism. He would make it out that the Atomic theory of the constitution of the universe, in so far as it is a purely physical speculation, reaches back historically to the time of Moses, and that its traditional teaching, as handed down by Pythagoras and Empedocles, was first perverted to atheism by Leucippus and Democritus. He was also quick enough to foresee that what he called the Hylozoic atheism, or the evolution of consciousness from an inherent cosmo-plastic force in matter, started by Strato in opposition to the fortuitous concourse of the atoms of Democritus, was the principle of matter that would be adopted by later Materialists. Cudworth's own hypothesis, which he held in common with his friend Henry More, the Platonist, of a Plastic Nature—a power which evolves certain ends without consciousness or intelligence—but derived, permitted, and, so to speak, left to itself by a Divine Providence, obviously presents its own difficulties. There is great elevation and breadth of thought in his survey of the heathen religions. He finds in these

* Birch's edition, 1820, p. 45.

evidences of God having never left himself without a witness in human hearts. He points out that theists and atheists, spiritualists and materialists, agree that something certainly existed of itself from all eternity. What then is this something, God or Matter? It is inconceivable that this necessary eternal existence should be other than an absolutely perfect and reasonable Being. Knowledge is possible only through Ideas that have their source in the eternal Reason. Sense is not only not the whole of knowledge, but is in itself not at all knowledge; it is wholly relative and individual, and not knowledge until the mind adds to it what is absolute and universal. And these Universals or Ideas come direct to us from the Eternal mind. They form "that light which enlighteneth every man that cometh into the world." It is the scholar of Plato who thus speaks.

In Cudworth's "Treatise concerning Eternal and Immutable Morality," the author exhibits that as there is an absolute criterion of knowledge in the mind itself, so also there is an absolute one in morals. Sense is unable, it is true, to understand how this can be, but "sense is a confused perception obtruded on the soul from without," whereas knowledge (ideas) "is an inward active energy of the mind." Among the ideas not drawn from sense, Cudworth places the conceptions of good and evil. Reason does not find them from without, but brings them with it. So the criterion of truth is to be found within the mind itself.

Several of Cudworth's MSS. are preserved in the British Museum. It is not to the national credit, that, with the exception of "a Treatise of Free Will," edited in 1838, they have not only not been published, but no adequate account or summary has been given of them. In the tractate on free will the author endeavours to establish that man possesses a contingent liberty of self-determination for good or for evil. He argues with great subtlety that this freedom of choice is the very mark or note of a rational imperfect being, such as man is. A perfect being, essentially good and wise, cannot, from the nature of its constitution require, or, humanly speaking, possess such a power.

Immense erudition was combined in Cudworth with remarkable speculative power. The extent of his learning, and his discursiveness in argument have contributed to the neglect of his writings in the current literature. The student, however, will recur to him with profit and mental pleasure.

At the time of the appearance of Cudworth's work, John Locke (1632-1704) had planned his "Essay concerning Human Understanding." He was an enthusiastic student of natural science. Addressing a vigorous mind, unencumbered with the speculations of others, to the question of the origin and limits of human knowledge, he published in the year 1690 his famous work. He found that Ideas are not innate. Knowledge of particulars is prior to knowledge of generals. Experience, sensible experience, is the first source of our knowledge. The senses give us simple ideas, which reflection compounds, and in this way abstract ideas are formed. We know at bottom nothing of substances except their attributes, which are taken from simple sense-impressions. The further man gets from the sensible, the more liable is he to error; and it is nowhere so common as in language. Locke's criticism of the understanding turns into a criticism of language. He deals with the confusion that ensues from the inexact use of words. He would therefore *make* words merely conventional, because only when thus limited have they a fixed sense. Truth in mere words can be nothing but a chimera. "Revelation" can give us no simple idea, and therefore cannot really extend our knowledge. Yet there are certain things which Locke finally admits transcend the reason, and are therefore objects of belief. Strength of conviction, however, is no sign of truth. Even of revelation the reason must judge, and enthusiasm is no evidence of the divine origin of a doctrine. He wrote later an "Essay on the Reasonableness of Christianity." Neither an Idealist like Berkeley, nor a sceptic like Hume, Locke stands on that neutral ground whence he surveys the position on both sides.

Among the English thinkers who took up and carried further the ideas of Locke, none stands nearer to Materialism than John Toland. He refers to the practice of the ancient philosophers to set forth an exoteric and an esoteric teaching, of which the former was intended for the general public, but the latter only for the circle of initiated disciples. Referring to this, he hints in one of his treatises "that the external and internal doctrine are as much now in use as ever," and this puts him in mind of what he was told by a near relation to the old Lord Shaftesbury. "The latter, conferring one day with Major Wildman about the many sets of Religion in the world, they came to this conclusion at last: That, notwithstanding those infinite divisions caused by the interest of the priests and the ignorance of the people, All Wise Men are of

the same Religion ; whereupon a lady in the room, who seemed to be minding her needle more than their discourse, demanded with some concern, What that Religion was ? To whom Lord Shaftesbury straight replied : Madam, Wise Men never tell." Toland himself has frankly expressed his esoteric doctrine in the anonymous "*Pantheistikon*," published at Cosmopolis, 1720. He demands, in this treatise, the entire laying aside of revelations and of popular beliefs, and the construction of a new religion which agrees with philosophy. His God is the universe ; from which everything is born, into which everything returns. His cultus is that of truth, liberty, and health. His saints and fathers are the master-spirits and most excellent authors of all times, especially of classical antiquity ; but even they form no authority to chain the free spirit of mankind. He regards thought as a phenomenon which is an inherent accompaniment of the material movements of the nervous system, but does not, like the ancient Materialists, consider this present world merely as a casual result preceded by innumerable imperfect experiments, but assumes a magnificent purposefulness inherent in the universe.

While the English band of thinkers of the time of Locke were pursuing their inquiries, there arose across the sea one of those exceptional figures which exalt our conceptions of humanity. Baruch Despinosa, or Benedictus de Spinoza, was born in 1632, at Amsterdam. His parents were descendants of Portuguese Jews who had sought refuge in Holland from the Inquisition. His father was an honourable but not wealthy merchant. Educated for a theological career, at the age of fifteen he was a match for a rabbi in the extent of biblical learning, and puzzled the Synagogue with questions to which satisfactory answers were not forthcoming. His teacher Morteira, the great Talmudist, alarmed, endeavoured to check this inquiring spirit. The attempt was futile. Proof against entreaties, against threats, against the proposition of a pension of one thousand florins annually, if he would only appear from time to time in the synagogue and keep his doubts to himself, he withdrew from the worship of his race. His assassination was attempted by a Jewish fanatic. Shortly after he was excommunicated with rites of great solemnity.

It was not simply a fervid, emotional, enthusiastic spirit that prompted Spinoza to separate himself from all that man-

kind holds dear, and to take poverty for his portion in this life. In a fragment entitled "On the Improvement of the Intellect," there are passages of biographical significance. "At first it seemed inconsiderate to renounce the good which was certain for a greater good which was uncertain. I pondered on the advantages which accrued from reputation and wealth, all of which I must renounce if I would seriously undertake the search after another object.....For I could not banish all love of wealth, honours, and sensual pleasures." In his own words, he "finally resolved" to pursue the dictates of his higher moods, and, by practice, to acquire these moods as the constant habit of his mind. He succeeded. Throughout his whole life he continued steadfast to the divinity of those aspirations which, in solitude, his soul had seen to be divine, and he found the sum of those aspirations in Love of God and Obedience to the Divine Will.

Spinoza gained a livelihood by polishing lenses. His eating and drinking cost him no more, on an average, than threepence a day. He had been a delicate child, and his constitution throughout life was weak. On Sunday, 22nd February, 1677, he was so feeble that the people with whom he lived left him reluctantly to attend divine service. He feared that he was sinking, but pressed them to go. After dinner, they again went to church, leaving a physician by his bedside. On their return all was over. At three o'clock he expired in the presence of the physician—who paid himself by taking a silver-handled knife and what money lay on the table. He died in his forty-fifth year, in the maturity of his intellect, but not before he had thoroughly worked out the whole scheme of his philosophy.

Let us now gain some approximation of the ideas of the man whom Lessing, Herder, Goethe, Novalis, Schelling, Hegel, referred to with honour.

There is the old yearning after Unity. God is the One Universal Immanent Being in Spinoza's system, as in that of Giordano Bruno. He endeavours to demonstrate this with a dry repelling geometrical rigour like the theorems of Euclid. Except for his method, he must be regarded as a mystic. His idea is that of an original Substance, embracing all existence. This Substance is God—the Infinite that comprehends all Matter and Mind. All that exists is only a succession of modes of being evolved by the Substance which is eternally the same. God is all existence. Spinoza adopted the language

of St. Paul: "In Him we live and move and have our being." Creation is not the creation of something out of nothing; not the calling into existence of that what *had* no being out of that which *has* no being; nor is it the re-fashioning of elements which have independent being; it is the constant flowing of the internal primal energy; the flux and reflux of the eternal tide. God is the energy, Nature the act. Soul and Body are one. Man is but a mode of the Divine Existence; his Soul, a spark of the Divine Flame; his Body, a mode of the Infinite Extension.

With Spinoza, there is but one sure avenue of investigation into these matters, and that is by regulation of the personal life. The type of the method of investigation is mathematics; which comprehends every object because it understands the immediate cause of the object. So this is the form chosen by Spinoza to demonstrate his ideas. It is the reverse of an attractive form. The reader at length begins to be angry at the conception of a world of unalterable sequences, where everything is determined by *conditions*, nothing by *purposes*; and is disposed finally to reject the logic which proves that phenomena are not wrought out by a conscious intention, but are the simple sequences of God's nature. Called upon to renounce his own conception of a Divine Fatherhood, in favour of a God whose essence is Impersonality, he begins to reflect whether the foundation of Spinoza's system—the identity of God and the Universe—is altogether unimpeachable,—whether in fact, Human Consciousness does not instinctively rise against this form of presentment of that Identity. It has been the fate of all system-mongers, that their systems do not cohere with everything.

In the English Materialism of the generation after Hobbes, Robert Boyle, the chemist (1627-1691), and Sir Isaac Newton (1642-1726), remained occupied with the phenomenal world. They initiated a rigid severance between the fertile field of experimental inquiry, and all those problems which are transcendental, or, in the present conditions of the sciences, unapproachable. Both exhibit the liveliest interest for questions of method, but only a very slender interest for speculative questions. They are distinctly empiricists. Of the elements of Epicureanism, Boyle rejects most distinctly the doctrine of the rise of the purposeful from the unpurposeful. His sincere

hatred of phrase-building, and of the pretended knowledge of Scholasticism, led him to an exclusive confidence in the single results of his experiments. With him the origination and destruction of things is only the combination and separation of atoms.

Less many-sided, but more intense than that of Boyle, was the influence of Newton in the establishment of a mechanical conception of the universe. Newton belongs to the number of those special mathematical geniuses which the seventeenth century—as though a development of European humanity had pressed in that direction—produced in such surprising wealth. A close view of his achievements shows that almost everywhere mathematical work, marked alike by genius and application, is the active spirit that inspires everything. His famous expression "*Hypotheses non fingo*," showed how little he regarded all speculative or theoretical Materialism. The true method of experimental science he declares to be that the principles are to be gathered from phenomena, and generalised by means of induction. In the region of speculation both Newton and Boyle were so far agreed that they ascribed to God the first origination of motion among the atoms, and they attributed to God certain modifying influences with the course of nature, but they sought the ordinary rules of everything that happens in nature in the mechanical laws of the motion of atoms.

The relation of Leibnitz (1646-1716) to the Materialistic philosophy may be briefly stated in a passage from his "Reflections" on Locke's Essay. "Our differences," says Leibnitz, "are important. The question between us is whether the soul in itself is entirely empty, like tablets upon which nothing has been written, according to Aristotle and the author of the *Essay*; and whether all that is there traced comes wholly from the senses and experience; Or whether the soul originally contains the principles of several notions and doctrines, which the external objects only awaken on occasions, as I believe with Plato." The nature of the problem is well stated here; and Leibnitz sides with Plato in his solution of it.

We have seen how difficult it is for Materialism to account, by its notions of atoms, for the *locality* of sensations, and, generally, for the facts of consciousness. Leibnitz tried to account for these by his doctrine of individual monads, with their Pre-established Harmony of intermixture. This distinguishes the ape-monad, for instance, from the human-

monad. By consequence, the restoration comes about of innate ideas. With Leibnitz, external experience is, in fact, internal development. His psychological monads, embracing both man and beasts, led the way, of course, to the declaration that the souls of the lower animals, like those of men, were immaterial and immortal.

But the subtlest criticism of the Materialistic philosophy of the early part of the eighteenth century came from George Berkeley, bishop of Cloyne (1684-1753), who, in the year 1710, at the early age of twenty-six years, produced his "Principles of Human Knowledge," wherein he assailed the stronghold of Materialism by ingeniously impugning the real existence of the object of all empirical investigation—the external world itself. Parmenides, amongst the ancients, had maintained that the phenomena of sense were delusive; and that it was only by mental abstraction that knowledge of the continuous and self-existent substance—the One and All—could be attained. Berkeley discusses the problem on psychological data. Accordingly, all things which we see are merely impressions made upon our organisation, and that therefore "Matter"—the core or substratum forming all qualities—is utterly unknown to us; in fact, as far as we are related, may be said not to exist. But in so far as people mean only by Matter those qualities that are seen, felt, tasted, and touched, Berkeley proclaims his agreement with the vulgar. The existence of an external world independent of our representations is a chimera. As man can perceive nothing but his own feelings and representations, and as he certainly is not the cause to himself of these, and as certainly that the external world is not the cause of these,—these feelings and representations are mental, and come from a Spirit—God, who is the substance or final cause of our ideas. "In a word, all the choir of heaven and furniture of earth—all those bodies which compose the mighty frame of the world—have not any subsistence without a mind: their *esse* is to be perceived or known; and, consequently, so long as they are not actually perceived by me, or do not exist in my mind, or that of any other created spirit, they must either have no existence at all, or else subsist in the mind of some eternal spirit."* And Berkeley argues that though we give the Materialists their external bodies,

* Principles of Human Knowledge, s. 6.

they, by their own confession, are never nearer the knowing how our ideas are produced, since they own themselves unable to comprehend in what manner body can act upon spirit, or how it is possible it should imprint an idea in the mind.

Berkeley, then, teaches that there is only *one* substance, *viz.*, Spirit. With this one substance he can construct the world. The introduction of a second substance, Matter, is superfluous, or worse. Its existence is a mere inference; is inferred in order to explain the phenomena: and what phenomena? those of perception;—*i.e.*, the phenomena of the thinking subject.

Shall we then pronounce Berkeley's Idealism satisfactory and true? Hume said of it that it admitted of no answer, but produced no conviction. As a mere play of reasoning there has been no refutation of it. There is but the appeal to the common irresistible belief of the reality of the external world. But this is not philosophy. The belief that the sun revolved round the world was for many centuries irresistible, and false.

But admitting that we can have no idea of an object except as it is perceived, that the ESSE of objects to us is PERCEPI, we need not say with Protagoras "that man is the measure of all things." Because *we* can only know objects as ideas, is it conclusive that objects exist *only* as ideas? By no means. We have no proof whatever of our perceptions being the absolute standard of things *existent*; the proof extends no further than to the things *known*.

The Idealist will say; "what ground have you for inferring that there *is* anything beyond your perceptions? You cannot possibly conceive or picture to yourself anything except through perceptions." And the only answer is: "Though *I* cannot conceive things otherwise, it by no means follows that they cannot exist otherwise."

And thus, at length, we are brought face to face with the doctrine of the relativity of our knowledge.

The foundation of Berkeley's Idealism is that objects are merely ideas, their *esse*, or total existence, being *percepti*. It leads to this limitation, that whatever is not perceived, does not exist: that existence is bounded within the circle of perception. It may fairly be demurred to such a proposition, that many things exist beyond the reach of human perception; and that we have no adequate evidence to warrant the assumption that God who made man did not *also* make a world in a very small corner of which man lives; and that this world is

the Non-ego which *directly* excites the changes in the Ego, however *indirectly* the excitation may come from God. And the vast majority of mankind, learned and ignorant, prefer this view.

We have now seen how closely Berkeley's Idealism is related to the system of Spinoza, who taught that there was but one essence in the universe, including both matter and mind, and that was Substance—God. Berkeley also taught that there was but one, and that one, Spirit.

The history of Philosophy revolves around great minds. There was one such born at Stockholm in the year 1688—a man with whose dimensions the educated world has not become familiar. Emmanuel Swedenborg—"the genius that was to penetrate the science of the age with a far more subtle science"—a master of the natural and physical sciences, published, in the year 1744-45, his "Animal Kingdom"—a work which contains the application of the system of Nature unfolded in his previous scientific and philosophical writings, to the Animal Creation. The principle of a necessary emanation of all things from a central Power is the basis of this system. The work, the design of which is unfulfilled, contains an anatomical and physiological account of the human body, with reflections and observations thereon in a high Platonic strain of thought. Swedenborg's genius conceived that he might attain the science of all sciences—to see through the veil of things, and unlock the mystery of the world. The result of this was his doctrine of Degrees and Correspondences, by which he seeks to show that all things in the physical world are correlated to things in the spiritual world. Thus Nature is in truth a revelation and a divine book, whose letters, the groves, hills, and rivers, the firmament and the lamps of heaven, are hieroglyphic representatives of corresponding spiritual realities. The proper study of mankind consists in discerning these correspondences of meaning between every part and every other part. Swedenborg's design of exhibiting such correspondences, which, if adequately executed, would be the poem of the world, in which all history and science would be comprehended, was narrowed by the exclusively theological direction which his inquiries took, and the dictionary of symbols has yet to be written. But the world has a sure chemistry,

* Emerson's "*Representative Men*."

by which it extracts what is excellent in its children, and lets fall the infirmities and limitations of the grandest minds.

In the fifty-fourth year of his age, being then in London, Swedenborg, according to his own account, had the eyes of his inner man opened, and was permitted occasionally to enter the spiritual world. This "Servant of the Lord Jesus Christ"—as he styles himself in the title page of his books—died at London, March 29th, 1772. Modern psychological history offers no similar example to him. "A colossal soul," says Emerson, "he lies vast abroad on his times, uncomprehended by them."

There is this distinguishing feature of Swedenborg's philosophical doctrine, that he never loses hold of the solid reality of the objective world. Though he asserts that the power of divining truth belongs exclusively to higher beings and powers, which view the circumference of things from the centre; it is not so, but the reverse, with human minds, which derive from the senses, or absorb through the senses, all the materials which they have to reason upon. "For we are born in dense ignorance; in process of time organs are opened for us, and ways prepared, and images themselves are sublimated, until they become ideas, and at length reasons; which, when connected into series, are brought under the inspection of the reasoning power. Thus, by slow degrees only, judgment is developed and reason displayed. This then is man's only way of attaining truth, so long as his soul lives in the body. . . . Analysis commences its web of ratiocination from the facts, effects, and phenomena which have entered through the bodily senses, and mounts to causes. . . . In the first place it searches for certain and evident materials, and collecting them from all quarters, heaps them together, and again selecting them from the heap, reduces them skilfully into order. . . . Enriched with, as it were, these treasures, and aided thereby, the mind girds herself to her task, and begins to work and to build. . . . Thus the mind, keeping along the path of analysis, founds and rears her palace, not in the air, or in an atmosphere too high for her, which is not her element, and where there is no support, still less foundation; but on the solid ground. . . . This is the only way to principles and truths—to high and almost to heavenly things—and no other appears to be open to us earth-born men. . . . To accomplish this grand end I enter the circus, designing to consider and examine thoroughly the whole world or microcosm which the soul inhabits; for I think it is in

vain to seek her anywhere but in her own kingdom."* Such is Swedenborg's method, as described in the Prologue of his chief work.

Pursuing the main stream of our inquiry, we find that although modern Materialism as a system appeared first in France during the eighteenth century, yet England was the classic ground for materialistic modes of thought. The ground had been prepared by Roger Bacon in the region of experimental physics, and by Occam, the champion of the later Nominalism. The physician David Hartley published in the year 1749 his "Observations on Man, his Frame, his Duty, and his Expectations." The book contains a psycho-physiological section, and a theological section. He divides man into two parts, Body and Soul; the Body being the instrument of the Soul; the brain the instrument of sensation and thought. But in the physiological section, he refers this last to mechanical vibrations of the brain. Dr. Priestley followed in the track of Hartley, and occupied himself greatly with attacks on the grosser forms of the French Materialism, which was now coming into vogue.

In their turn, the chief French writers directed their attention to the current English philosophy. Voltaire's criticism of it was distinguished by his characteristic acuteness. He concisely sums up a prolix inquiry in Locke concerning Free-will, that "to be free means to be able to do what we like, not to be able to will as we like." The question, however, is not whether I can move the left or right foot without any other cause than my own will, but whether Cartouche and Nadir Shah could have avoided the shedding of blood. The Determinist, who inquires concerning responsibility in the character of man, denies that a persistent will can be formed by him in opposition to the character. If we find an apparent instance, this only proves that in the character of such a man forces still slumbered and could be awakened which we had previously overlooked. Despite the radicalism of Voltaire, he is perhaps more serious as to the existence of God than any one of the English Deists. Although he went over to a gloomy theory; and dwelt much upon the evil in the world, yet nothing remained farther from his mind than the assumption of blindly acting natural laws. "If there were no God," he

* "*Animal Kingdom*," London, 1843, vol. 1, p.p. 6-11.

said, "it would be necessary to invent him." Apart from the playfulness of the remark, it will be found to contain Voltaire's real view that the idea of God is politically indispensable for the maintenance of virtue and justice. He will not, however, "assert that it is impossible for the Creator to endow matter with thought and feeling." In moral philosophy, Voltaire leaned a good deal on Locke's pupil, Lord Shaftesbury.

Shaftesbury was a man of idealistic vehemence of enthusiasm, and full of a poetic conception of the world. He propounded the theory that there lies in every human breast a natural germ of enthusiasm for virtue. This is the spring of all that the human mind shows of what is noblest and greatest. His religion was the religion of the happy and the fortunate. He had no leanings towards that Christianity which was first preached as the religion of the poor and the miserable, but has now, through a remarkable dialectic of history, become the favourite religion of those who practically hold poverty and misery to be an everlasting ordinance of God in this life, and who are specially well-pleased with this divine arrangement because it is the natural foundation and the only moral sanction of their own favoured position.

The influence of Shaftesbury is to be seen also in Diderot, until he fell under the domination of Holbach and La Mettrie. From the works of these three Frenchmen are derived the springs of richest nourishment for social atheism, if we may thus designate for the sake of brevity that atheism which attacks and rejects the God recognised in the present constitution of society, in State and in Church, in the family and in the school. The frightfully cutting phrases of Diderot acted more energetically on contemporary French society than any passages of La Mettrie's "L'homme Machine," or Holbach's "System of Nature." "What," he says as to the prevalent conception of God—"What wrongs have these unhappy souls committed? Who has condemned them to these torments? The God whom they have offended. Who then is this God? A God of infinite goodness. What! can a God of infinite goodness find any pleasure in bathing himself in tears? These are the people of whom one must not say that they fear God, but that they are frightened of him. Considering the picture that is drawn for us of the Supreme Being, of his readiness to anger, of the fury of his vengeance, of the comparatively great number of those whom he allows to perish, as compared with the few to whom he is pleased to stretch forth a saving hand, the most righteous soul must be tempted to wish *that he did not exist.*"

We have already pointed out that ancient Materialism attributes sensation, not to the atoms, but to a peculiar arrangement in space of atoms, which, taken separately, are incapable of sensation. Nothing was left then but to make the experiment of placing sensation as a property of matter in the smallest particles themselves. This was done by Robinet in his book on "Nature" (1761), while La Mettrie, in "L'homme Machine" (1748), still kept to the old Lucretian conception. Robinet attributes to all the smallest particles life and spirit, even in the constituent elements of "inorganic" nature, only without any self-consciousness. Man only knows his sensations—but not his own essence, nor himself as substance. The stand-point of Kant, which regards consciousness and external objects as mere phenomena of a third series whose absolute nature remains incognisable by us, was not reached.

On the string of French Materialism the names of Voltaire, Condillac, Diderot and the Encyclopædists, Helvetius, are followed by those of La Mettrie and Holbach. In La Mettrie's chief work, Man is represented simply as a "Machine." Thought is nothing but a consequence of the organisation of our mechanism. Soul without body is like matter without form; it cannot be conceived. A moving principle is present in matter, either actively or potentially. There is not the slightest reason for assuming that there is an agent outside of the material world. At bottom, the individual man is certain only of his own sensations. The relation of man to the lower animals is indicated by the analogy of their organisation. Everywhere the consequence is drawn that only the education he receives through the senses makes man to be man, and gives him what we call the soul, the capacity for which is dormant only in his physical organisation. The various temperaments, resting on physical causes, determine the character of the man. What would have sufficed in the case of Julius Cæsar, of Seneca, to turn their fearlessness into timidity? An obstruction in the spleen, or the liver. A mere nothing, a little fibre, some trifling thing that the most subtle anatomy cannot discover, would have made two idiots out of Erasmus and Fontenelle. Man differs from the lower animals only in degree, not in kind. For our peace of mind it is indifferent to know whether there is a God or not, whether he created matter, or whether it is eternal. What folly to trouble ourselves

with things the knowledge of which is impossible, and which, even if we knew them, would not make us a bit happier! Only ignorance of natural forces has made us take refuge in a God. To destroy chance is no proof of the existence of God, because there may very well be something which is neither chance nor God, and which brings forth things as they are—namely, Nature. The world would never be happy until it became atheistic. Then, deaf to all other voices, men would follow their own individual impulses, and these impulses alone would lead them to happiness, along the pleasant path of virtue.

La Mettrie here forgets, that even religion itself, quite apart from any revelation, must be reckoned among the natural impulses of man, and if this impulse leads to all unhappiness, it is not easy to see how all the other impulses, since they have the same natural origin, are to lead to happiness. As to immortality, La Mettrie thinks it is possible. The insect caterpillar has probably never really known it was to develop again into a butterfly. We know only a small part of nature, and as the matter of which we are made is eternal, we do not know what may yet come of it. The life-principle, La Mettrie deduced from physiological observations, as not in the whole, but in the separate parts of the animal body. Each tiny fibre is moved by a principle inhabiting it. Man's happiness rests upon the feelings of pleasure. As we are merely bodies, the highest intellectual delights are also in substance bodily pleasure. He agrees with Hobbes that there is no such thing as virtue in an absolute sense, that anything can be called good or bad only relatively—in relation, in fact, to Society. The distinction between good and bad consists in this, that with the former public interests outweigh private interests, while the contrary is the case with the latter. Society must for its own preservation prosecute the bad.

About a score of years after the publication of La Mettrie's "Man as a Machine," appeared that work which has often been designated as the code of all Materialism—the "System of Nature," (1761), by Holbach. Lagrange the mathematician, Diderot, and Naigeon, a literary assistant of Diderot and Holbach, contributed particular sections to it. "Man is unhappy," so the preface of the book begins, "merely because he misunderstands nature." Nature is the great whole of which man is part, and by which he is influenced. Man is a physical being, and his moral existence is only a special aspect of his physical nature. The world shows us everywhere nothing

but matter and motion; an endless chain of causes and effects. Motion is inherent in matter. Everything in the universe is constantly in motion, and all rest is only apparent. Matter and motion are eternal, and creation out of nothing is an empty phrase. We know nothing of the elements of matter; only some of its properties. Between what are called the three kingdoms of nature there exists a continual exchange and circulation of material particles. This is the invariable course of nature. This interchange or motion originates the parts of the universe, maintains them for a time, destroys them gradually, the one by means of the other; while the sum of existence remains always the same. Nature, in its combining activity, creates suns, creates planets. She will perhaps some day scatter again the particles out of which she formed the wondrous masses, of which man gets only a passing glimpse. As with Epicurus, as with Lucretius and Gassendi, fire is still the life-principle of things. Attraction and repulsion are the forces from which all combination and separation in bodies proceed; they are related to each other as Empedocles had seen, like love and hate in the moral world. There is in nature no such thing as order or disorder. Consequently there can be no such things in nature as miracles. Though we attribute to chance, or intelligence, or purpose those effects whose connection with their causes we cannot see, these are mere notions of human beings—order and disorder and purpose are not in Nature.

But in refusing the title of objectivity claimed for the ideas of Ultimate Cause, of Intelligence in Nature, of Purpose, of Order, and so on, Holbach neglects to account for the universal possession by man of these ideas, and ignores, even when they are not wholly rejected, their value to mankind. And if order and disorder do not exist in Nature, then also the antithesis of the Beautiful and the Ugly rests equally and merely upon human notions. So that, from Holbach's standpoint, the figure of a hunchback is essentially as fine as that of a Venus—a cotton mill equally impressive as a temple or a cathedral. So, too, from this standpoint, Good and Evil become mere names. The "System of Nature," then, exhibits in a clear light the narrow limits in which the Materialistic Philosophy moves. Only a single spiritualist offers to Holbach any difficulty. It is Berkeley, a bishop of the Church of England, who, though dominated by theological views more than Descartes and Leibnitz, yet reached a philosophy more logical, and in principle further from ecclesiastical dogma, than either of

them. "What shall we say," says Holbach, "of a Berkeley, who tries hard to convince us that everything in the world is but a chimerical illusion, and that the whole universe exists only in ourselves and in our imagination?" But how those who deny an immaterial soul are to dispose of Berkeley, Holbach has omitted to set forth, and he confesses that this, the most extravagant of systems, is almost the most difficult to refute.

Materialism obstinately takes the phenomenal world for the world of realities. What weapons has it against him who attacks this main stand-point? Are things as they seem? *Are* they at all? These are questions that continually recur in the history of Philosophy, and to which only the present time can give a half-satisfactory answer—an answer, indeed, which adopts neither extreme. The circle of fundamental problems remains invariably the same—the same as in truth it already was in the philosophy of the ancients.

The great champion of modern philosophy is Immanuel Kant, who lightly overturned the edifice of collective experience, with all the historical and the exact sciences, by the simple assumption *that our notions do not regulate themselves according to things, but things according to our notions*. The whole objective world is, in a word, not absolute objectivity, but only objectively so for man and other organised beings, while behind the phenomenal world, the absolute nature of things, the "thing-in-itself," is veiled in impenetrable darkness. *Consciousness* is not to be explained out of material movements. The relation of external movement to sensation does not account for sensation. Between Man as an object of empirical research, and Man as he is in immediate self-knowledge, there is an impassable gulf. In regard to that self-knowledge, it had been remarked by Philo the Jew, that the mind is like the eye; though it may see all other objects, it cannot see itself, and therefore cannot judge of itself. Before Kant, Berkeley the bishop and D'Alembert the mathematician had the one looked upon the whole world of phenomena as a great illusion of the senses, and the other had doubted whether there exists outside us anything corresponding to what we see.

There is one province of exact physical inquiry that prevents contemporary Materialists from perversely turning away

from the doubt as to the reality of the phenomenal world, and that is the physiology of the sense organs. It leads back to the examination of the Protagorean proposition: That man is the measure of all things. But when it has been once demonstrated that the quality of our sense-perceptions is entirely conditioned by the constitution of our organs, it follows that to another organisation the very same objects may appear quite different. The idea, however, that the phenomenal world is only a *picture* of real objects runs through the whole history of human thought. It is found among the thinkers of ancient India, as well as among the Greeks. Plato believed in a world of ideas, the eternal and perfect types of earthly phenomena. Among the moderns, Swedenborg believed that Nature was an objective hieroglyph of a corresponding spiritual reality.

If we wish to get a clear grasp of Kant's line of thought, our way lies through David Hume. Hume had proceeded by a rigorous application of Berkeley's reasoning concerning matter to mind, and showed, that according to this reasoning, our conclusions respecting mind were equally as visionary as those respecting matter. If matter was an abstraction, so, by the same process of reasoning, was mind. Hume's process comes to this; As we use the name of body for the sum of the phenomena which make up our corporeal existence, so we employ the name of soul for the sum of phenomena which constitute our mental existence; and we have no more reason in the latter case, than in the former, to suppose that there is anything beyond the phenomena which answers to the name. In his way of thinking, Hume stands as close to Materialism as so decided an universal sceptic ever can. He occupies the ground prepared by Hobbes and Locke. For that weak point of Materialism, that the transition from movement in space to perception and thought is inexplicable, he points out that this same inexplicableness applies to *all* relations of cause and effect. For example, food taken into the body nourishes the body for certain, but *how*, we do not know. When a spark ignites gunpowder, we perceive a power in the spark to ignite gunpowder; *what* that power is, we know not: we only know its effects. And our ignorance is equally great of the gunpowder; *what* it is, we know not; we only know its appearances to us. Hume declines to admit that because of the existence of one thing, another thing, that is, a Cause, must necessarily exist: he held that a final cause was a product of the imagination. In consciousness, he found nothing but successive per-

ceptions, and mind was nothing but a bundle of such perceptions. Locke had already argued that we are as ignorant of spirit as of substance; and that we know mind only in its manifestation, not as a substratum. Hume's criticism of the doctrine of personal identity was very acute. "For my part," he says, "when I enter most intimately into what I call *myself*, I always stumble upon some particular perception or other, of heat or cold, light or shade, love or hate, pain or pleasure. I never can catch *myself* at any time without a perception. When my perceptions are removed for any time, as by sound sleep, so long am I insensible of myself. . . . I may venture to affirm of mankind that they are nothing but a bundle or collection of different perceptions." *

But the price paid by Materialism for this kind of defence is, indeed, not less than that which the Devil in the legend demands for his aid. The whole cause of Materialism is lost by the admission of the inexplicableness of all natural occurrences. If Materialism quietly acquiesces in this inexplicableness, or takes final refuge in Dysteleology, or the doctrine of Purposelessness, it ceases to be a philosophical principle; it may, however, continue to exist as a maxim of scientific research. This is, in fact, the position of most of our modern "Materialists." They are essentially sceptics; they no longer believe that matter, as it appears to our senses, contains the last solution of all the riddles of nature; but they proceed in principle as if it were so, and wait until from the positive sciences themselves the necessity arises to adopt other views.

That Hume produced so profound an impression upon Kant that he never names him but with the utmost respect removes Kant from the number of those who base their capacity for Philosophy upon a measureless contempt for Materialism. Kant agrees with the ordinary Idealism that the phenomenal world does not show to us things as they are, and that physical science will never discover to us the internal constitution of things which is not phenomenon. As soon, however, as the Idealist attempts to teach us something as to the world of "the things-in-themselves," he cannot have a more irreconcilable opponent than Kant. With him all things range themselves according to our organisation. He went so far as to hold that even the strict necessity of the axioms of Euclid in consciousness was merely subjective and to be psychologically explained. The highest degree, then, of certainty in our

* Hume's *Works*, Edinb. 1826, vol. 1, p. 319.

knowledge is conditioned or limited by the nature of the knowing faculty. What Locke and his school do not observe is, that experience is no open door through which external things, as they are, can wander into us, but a process by which the appearance of things arises within us. That in this process all the properties of these "things" come from without, and the man who receives them has nothing to do, contradicts all the analogy of nature in the case of any development of a new thing from the co-operation of two others. If we had no sense but hearing, then all experience would consist of sounds, and we could say, with demonstrative certainty, that all phenomena must consist of sound. The fact that we have experience at all, is determined by the organisation of our thinking, and this organisation exists *before experience*. Further, it is the very condition of our experience.

To seek out these first conditions of all experience in thinking and in sense is the immediate aim of Kant's famous work "The Critique of Pure Reason." He there seeks to show that not only in mathematics, but in every act of knowledge, *a priori* elements co-operate, which throughout condition our experience. Some of his later critics, as the younger Mill and Lange, point out that though the universality and necessity of mathematical principles are, it is true, not gathered from experience of mathematical objects, which do not actually exist in nature, but are the products of reflection—this very reflection is suggested and originated *by* experience. To the decisive question, How are synthetic judgments *a priori* possible? Kant's answer is, Because in all knowledge is contained a factor which springs not from external influences, but from the nature of the knowing subject, and which, for this very reason, is not accidental, like external impressions, but necessary, and is constant in all our experience. The business of philosophy is, then, to investigate this factor. On interrogating his consciousness, Kant found certain ideas such as Time, Space, Causality, could not be resolved into Experience alone. Nor, on the other hand, although *a priori*, could they be supposed absolutely *independent* of Experience, being, as it were, only the *forms* (necessary conditions) of Experience. Although all our knowledge begins with Experience, it by no means follows that it originates in Experience. Kant, therefore, assumes two main sources of human knowledge—Sense and Mind. His merit as a philosopher is that he has raised Sense to the level of a source of knowledge equally valid as Mind; his uncer-

tainty, that he allowed to continue at all Mind as free from all influence of the senses. Excellent is his doctrine that all thought must ultimately fall back upon Intuition, that without Intuition no object of knowledge can be given us; inadequate, on the other hand, is the view that mere Intuition, without the co-operation of Sense, afford knowledge at all.

Tosay, however, that our ideas of Time, Space, Causality, arise from Sensibility or Experience would admit the original sensuousness of all thought. But in no act of knowledge can this isolated sense be shown. All knowledge has an *a priori* element in the nature of the knowing mind, and an *a posteriori* element in the external object given in experience. Knowledge is a function of the two; but the co-efficients are not separable in any one particular act.

But Kant conceived that he had discovered a pure isolation of Mind, above and beyond Experience, in two invariable elements of all cognition—*Space* and *Time*. You cannot conceive bodies without space; but you can conceive space without bodies. Space, therefore, is the indispensable condition of sensation: the Form of external Sensibility. It is not given in the materials of sensation; since you may conceive the objects annihilated, but cannot conceive the annihilation of Space. So with Time, which is the Form of internal Sensibility. We cannot conceive things as existing, except as existing in Time; but we can conceive Time as existing though all things were annihilated. Such, then, are the two indispensable conditions of all operations of our organisation, the two Forms with which *we* invest all the varied materials presented to us. These two Mental Forms, then, conditioning all acts of knowledge, lie in the Intuition. Outside of it, in the sphere of sense, they are mere illusions, and have no real existence. As to Materialism, this treats Time and Space as it treats at bottom the whole sensible world, simply as objective. Kant's view, on the contrary, is that man's experience is a product of certain fundamental ideas, the whole import of which lies in this fact, that they determine experience. He considered the idea of Cause to be a primary idea of the Pure Reason, and as such underlies our whole experience. Divested of all Kantian terminology, it may be put thus: the idea of Cause is rooted in our organisation, and is in point of the disposition to it, before all experience. It is a transcendental postulate—the abiding mystery which is the root of all Religion.

But the doctrine of Hume as to Cause still holds ground

in our day, and has had no less a man as its adherent than John Mill, who propounds the amazing notion that among the many other worlds around us, there may be some in which "events" succeed each other at random without any fixed law, thus regarding belief in causality as a mere consequence of induction in human experience. Comte, too, dismisses the notion of Cause, and replaces it by the notion of invariable sequence.

Kant's relation to Berkeley stands in this, that beyond the realm of experience there lies a sphere which to our knowledge is absolutely inaccessible. His relation to Hume, who said that the Mind was treacherous, and as such not to be trusted in the inquiry, consists in Kant's saying that Mind was to be trusted as far as it could go. We do not even know whether what is called the "thing-in-itself," as distinguished from its phenomenal appearance, really exists. We only know that the logical application of our laws of thought leads us to the notion of an entirely problematical something which we assume as the cause of the phenomenon so soon as we have recognised that our world can only be for us a world of representation. If it is asked, where, then, are things? The answer runs, In the phenomena, which embraces everything that we can call "real." The phenomena are what the ordinary understanding calls things: the philosopher calls the things phenomena, in order to denote that they are not something existing entirely outside myself, but a product of the laws of my understanding and my sensibility, showing us that the whole of our world of appearances depends upon our organs. A whole infinity of interpretations becomes, therefore, rationally possible; but it remains, nevertheless, that all these different views of differently organised beings have a common unknown source as their origin, the "thing-in-itself." The true essence of things, the last cause of all phenomena, is, however, not only unknown to us, but as even the idea of it comes from our organisation, we do not know, whether, beyond our experience, it has any meaning at all.

Kant denies that the question of the nature of things in themselves has any interest; he contents himself with the given world. "What things may be in themselves" he says "I know not, and do not need to know." But into the orderly relations of phenomena "penetrate observation and analysis, and no one can say what progress this knowledge may make in time." And in his estimate of the value of the table-work

of empirical psychology—at least as to its applicability for a complete classification of the mental activities, he is the forerunner of Herbert Spencer.

Kant distinguishes the mental faculties into two kinds; those of the Reason; and those of the Understanding. Reason is not satisfied with less than consummate and perfect knowledge. Understanding is empirical, and deals wholly with the world of sensation. The ideas Soul, World, God, are only the expression of those efforts after unity that lie in the reason. If we attribute to them an objective existence outside ourselves, we fall at once into the shoreless sea of metaphysical errors. So long, however, as we hold them in honour as our ideas, we only satisfy an irresistible demand of our reason. These ideas do not serve to extend our knowledge, but in their simple existence they do serve to refute the point-blank assertions of Materialism, and thereby to make way for the moral philosophy which Kant holds to be the most important branch of philosophy. What justifies the ideas as opposed to Materialism is not their claim to a higher truth, but the complete and absolute renunciation of any theoretical validity in the sphere of the knowledge that has for its object only the external world. Precisely because we recognise the phenomenal world as a product of our organisation, we are able to assume a world independent of our forms of knowledge. This assumption is not a transcendental knowledge, but merely the ultimate consequence of the use of our faculties in judging what is given to us.

Reviewing this exposition of Kant's doctrine, the results appear as follows: That a knowledge of things *per se* is impossible: That there exists an external world independently of us: That all our knowledge is subjective in its main aspect, and therefore relative; and is based upon mental forms or ideas that are independent of experience: That our knowledge, though relative, is to be relied upon as far as it can go: That thus the veracity of consciousness is established, and with the veracity of consciousness is established the criterion of morals.

In this presentment there is a mixture of cognitions with *conditions* of cognition. It is not ideas that are independent of experience, but the organic conditions on which the ideas depend. The final result of the ideas of God, Virtue, and the like, rests finally on the immediate personal convictions of consciousness, which are wholly out of the region of demonstration. That these convictions have universally prevailed in humanity is exhibited in the long course of history.

But whether the Kantian ideas are to be considered the *a priori* element of all knowledge, or that we think at all is previously determined by the constitution of our organs, that in fact, the conditions under which we think are the *a priori* element, makes it a question as to how far the problem is one to be approached by the methods of philosophy or by those of physiology and psychology. At the present time it appears that the latter methods command most attention. On the one side it may be said, by way of example, that the oak-form pre-exists in the acorn. But a scientific botany is not content with this. It declares that extraneous agencies, as heat, moisture, air, manure, are requisite to make the oak actually. In like manner, proceeding from physiology, or the mechanical function of the sense-organs, a scientific psychology which examines the basis of mind, is disinclined to accept the evolved result of experience as the *a priori* conditions of experience; refuses to accept the Forms *into* which Thought developes as necessarily being the pre-existing Forms *through* which it is determined. The question remains, Did Kant commit the metaphysical fallacy of erecting the *posterius* into a *prius*, the product into a factor? Did he sufficiently consider the relation of his Thought-forms to the products of organic Conditions acting on the stimulus of external objects? That there must necessarily be a ground or condition in the mind which makes the representations of an object so and not otherwise, makes for the Kantian view. Kant, however, refused to consider the Mental or Thought-forms as results of the organism. He thought he had discovered that these forms rule the organism; dictate to it. Attempt to conceive Space and Time as *objective* realities. Say that Space is either limited or unlimited—neither condition is objectively conceivable. So with Time; time either commenced or did not commence. Neither proposition is conceivable. But, in our human thinking, Space *must* be either limited or unlimited. Time either commenced or never has commenced. Our capacity of thought is thus peremptorily proved incompetent to what we necessarily think about. Space and Time, therefore, are, so to speak, Fictions, not objective realities; mere Mental Forms, which *condition* all our conceptions. It may be, however, that Kant's attempt to discriminate the objective from the subjective, the *a posteriori* from the *a priori* elements in consciousness, is utterly chimerical. It is one thing to say, Here is an organism with its inherited structure, and aptitudes dependent on that structure,

which must be considered as necessarily determining the forms in which it will be affected by external agencies, so that all experience will be a compound of subjective and objective conditions: another thing to say, Here is the pure *a priori* element in every experience, the form which the mind impresses on the matter given independently.

On the problem of the freedom of the will, Kant tried to crack that very hard nut by abolishing it altogether from the phenomenal world, or world of bodily experience, and placing it in the real world of super-sensual ideas. Quite independently of all experience, Kant believes that he can find in the human Consciousness the moral Law, which, as an inner voice, commands absolutely, but is not absolutely obeyed. Two things, he said, he contemplated with ceaseless wonder, the starry world without, the moral law within. Recent philosophers, however, profess to see in conscience nothing more than a product naturally evolved in the course of humanity by the demonstration of the paramount necessity of individuals forming part of organised communities doing unto others as they would wish others to do unto them; and so, by long practice, producing the fine moral sensitiveness which we commonly know by the name of conscience.

Kant's doctrine of freedom has a mystic background which seems desirable for the moral impulse of the soul, but which, at the same time, confuses that clear and definite doctrine of the relation of the world of phenomena to the world of things-in-themselves, and lands his system in uncertainty. His notion is, that in order to be able to support *practically* the doctrine of freedom, we must *theoretically* assume it as at least possible, although we cannot know in what way it is possible. This postulated possibility is built upon the notion of things-in-themselves as opposed to phenomena. If the phenomena were the things-in-themselves, as Materialism maintains, freedom could not be saved. In such a case, man would be a marionette, or an automaton. Kant's view of this question has a close resemblance to that of Cudworth. There is, so to speak, a circle drawn round man's being, within the limits of which he is not unconditioned, but has a conditioned freedom of choice, which he habitually and consciously exercises. Though there is no action of Man which is not, physiologically and psychologically considered, determined by the organisation of the individual and the circumstances under which he finds himself placed, we have, nevertheless, a practical convic-

tion at bottom that we have freedom of choice, although our understanding does not see how this can be so. But when we consider that we do not know even ourselves as we are in ourselves, but only as we appear to ourselves, and that our conception of ourselves and of our will as a part of ourselves is unavoidably phenomenon, this conviction is of quite the same piece as the rest of our real knowledge.

Thus Kant's world of reality, as distinguished from the world of phenomena, goes back to Plato, and is a world of Ideas—of Poesy; and on this ground stands in the closest connection with the noblest emotions of the human spirit. For poesy, in the high and comprehensive sense in which it must be taken, cannot be regarded as a capricious playing of talent and fancy with loose imaginations for amusement, but is an offspring arising from the deepest life-roots of the race, and is a complete counter-balance to the pessimism which springs from an exclusive acquaintance with external reality. It is the blossom and the fragrance of all human knowledge, human thoughts, human passions, emotions, language. And the scholastic subtleties of Kant's views may be forgotten in the loftiness of the idea of Duty which he kindled in Fichte and other succeeding minds, and many a passage of his writings, in spite of their cumbrous phraseology, exercised an entrancing influence, as of a heroic song, upon those spirits that were seized by the ideal revolt against the physical doctrines of the age. Especially has Schiller, with a spiritual divination, seized the core of his doctrines and purified them from scholastic dross. Philosophy is not important only through those elements of it that stand the test of the understanding, and are numbered among the assured treasures of human knowledge. Creations of poetic combination, which criticism attempts to disintegrate, may through their spirit exercise a greater influence than the clearest expositions, and human culture can less spare the stimulating glow of these revelations than the clear light of criticism. Nor is any thought so calculated to reconcile poesy and science as the thought that all our so-called "reality," so far as our knowledge extends, is only *appearance*.

Among the philosophical successors of Kant, an important place is held by Schelling, to whom our own Coleridge was indebted for his highest metaphysical flights. Schelling's

theory is that the Finite has only an apparent existence, inasmuch as it is the product of relative reflection. The One Absolute Nature reveals itself in the eternal generation of existing things, which on their part constitute the *forms* of the first. Therefore each individual being is a revelation of Absolute Being, in a determinate form. Nothing can exist which does not participate in the Universal Being. Consequently the natural world is not *dead*, but animated and divine. On the subject of Morals he declares that the knowledge of God is the first principle of all morality. The existence of God necessarily implies that of a moral world. Virtue is a state of the soul in which it conforms itself not to an external law, but an internal necessity of its own nature. The essence of morality is the tendency of the soul to unite itself to God as the centre of all things. Social life, regulated according to the Divine Example with reference to morality and religion, is what we denominate a Community or the State. It is a harmony of necessity and free-will, with an external organisation. History, as a whole, is a revelation of the Deity, progressively developed. In his treatise on Free-will, Schelling regards self-hood as spirit and will, which have the power of separating themselves from the Universal Will that sways all Nature, by virtue of individual free-will. The consequence of this opposition of Individual to Universal Will is the origin of evil, which becomes actual only by virtue of such opposition.

The theory of Schelling is remarkable for the magnitude of the problems it would solve; the consistency of its plan, and the wide circle of its application. It binds together by one single Idea all the essences of Nature—the identity of the human mind and nature with the essence of all Being. Of all philosophical hypotheses, it is, perhaps, from the universal point of view, the most coherent.

Of Hegel, there is little to say that bears upon a definite relation to Materialism. The reader who takes pleasure or derives profit in metaphysical subtleties, may find in his works such as have not been presented since the days of Aquinas. Hegel's system has been happily characterised as Panlogism. It may, however, be worth while to note his relationship with the doctrines of Giordano Bruno and Spinoza. In his "Philosophy of Religion," Hegel condemns the notion that God created the world by a single act as vulgar; Creation is not an act, but an eternal moment,—not a thing *done*, but a thing perpetually *doing*; God did not *create* the world, he is eternally

creating it. Attached also to the vulgar notion, is another less precisely but more commonly entertained; namely, that God, having created the world by an act of his will, lets it develop itself with no interference of his; as Goethe ridicules it, he "sits aloft seeing the world go." This was not the doctrine of St. Paul, whose pregnant words are, "IN HIM we live, and move, and have our being." We live *in* God, not out of him, not simply by him. And this is what Hegel means when he denies that the Creation was a single act. Creation was, and is, and ever will be. Creation is the reality of God: it is God passing into activity, but neither suspended nor exhausted in the act.

"He from within glories to move the World,
To foster Nature in Himself, Himself
In Nature." *

Hegel differs from Kant in this, that Kant regarded the identity of object and subject as an identity limited to consciousness—as a truth of mere psychological experience—outside that, it has no truth absolutely. The distinction is here. Kant affirms our knowledge of the external world as applicable only to phenomena—to things outside *plus* our organisation; but of things-in-themselves, we can, in the nature of the matter, have no possible knowledge whatever. Hegel obliterates the distinction of objective and subjective, of phenomena and noumena, by declaring that the thing-in-itself is Thought, and thought alone, and thus, in effect, goes back to Berkeley. But take away the objects of thought, and where is thought?—It vanishes. An absolute object or an absolute subject is unthinkable. The reality, however, of the object world is rooted in the sensibility of the subject to what is termed the Feeling of Resistance, which Herbert Spencer calls—"the primordial, the universal, the ever-present constituent of consciousness." And the same writer notes the immeasurable vastness and the inexhaustible contents of the object-world as pointedly contrasted with the limited sphere of the subject-world. "Mysterious as seems the consciousness of something which is yet out of consciousness, the enquirer finds that he alleges the reality of this something in virtue of the ultimate law—he is obliged to think it."

The doctrine of one of the most recent German philosophers, Schopenhauer, is virtually the old oriental one of eman-

* Goethe.

ation and final absorption. Individual life, wherever it emigrates, or in whatever shape it is born or exists, is a long disease. Hegel found the essence of all phenomena in Thought: Schopenhauer finds it under a different form, Will. Philosophy has never been wanting in such speculations—speculations that propound formulas, expressed in such terms as "Matter," "Force," "Thought," "Will," as the secret of the absolute unity, the motive power and reason of the universe. Systematising ends in phrases, names that stand for the unknown thing-in-itself.

CHAPTER III.

The Present Time.

Idealism and Materialism are opposite shores; the tidal wave of thought ebbs and flows towards each in turns. To the old fame of Germany in philosophical criticism now succeed excursions in every branch of knowledge. Niebuhr and the two Humboldts may be especially named as pioneers. Isolated attempts were made to explain naturally the origin of man through the development of an animal form, amongst which that of Oken (1819) commanded most attention. Wherever it became a question of definite knowledge, empiricism, as opposed to all metaphysic, was followed.

Most of our modern Materialists are, as a matter of course, inclined *a priori*, and before any examination, to deny roundly the connection of their views with La Mettrie, or even with Democritus. The favourite view is that modern Materialism is a simple result of modern science, and for this very reason not at all to be compared with similar views of ancient times, because our modern sciences did not exist in these earlier times. But this view vanishes, as we have seen, under historic examination. That the influence of the modern sciences upon the special development of Materialism, and particularly upon its wider spread and propagation, is very great, need not be said. Our exposition, however, will sufficiently show that most of the questions we have now to do with are just the old ones, and that only the material is changed, but not the aim nor the method of demonstration.

In France a materialistic basis was given to physiology by Cabanis (1795-1824). We find in Cabanis nearly all the watchwords of our modern Materialists, as *e.g.*, the idea that thoughts are a secretion of the brain. In the sphere of phenomena, or, as he expressed it, of "secondary causes," which alone are accessible to man, we find intellectual functions everywhere dependent upon organisation. Since Cabanis, the resolution of mental functions into the activity of the nervous system has kept its ground in physiology, whatever individual physiologists may have thought as to the ultimate grounds of all things.

Nor have those minds naturally disposed towards Idealism been unaffected by the scientific consideration of things. How far Goethe was carried by scientific feeling is every day becoming more generally recognised. In many of his expressions we discern a calm and gentle tolerance towards the one-sidedness of the idealistic tendency, the kernel of truth in which he knew how to value, while at the same time his mind felt itself drawn more and more decidedly to the objective view of nature. He, the poet, was freer from fantastic extravagance of speculation than many a professed man of science.

The revival of Materialism as at present held may be said to date from about the year 1830. About that time the spirit of enterprise in commerce and industry began to bestir itself. In England particularly material interests developed, and soon combined with the natural sciences against everything that seemed to turn man aside from his immediate purposes. Feuerbach, in Germany, a disciple of Hegel, steps forward and declares That the new philosophy makes man, including nature as the basis of man, the one universal and highest object of philosophy—makes anthropology, therefore, including physiology, the universal science. This, however, was but half way. The genuine Materialist will always incline to turn his gaze upon the great whole of nature, and to regard man as a wave in the ocean of the eternal movement of matter. The nature of man is to the Materialist only a special case of universal physiology, as thought is only a special case in the chain of the physical processes of life. He likes best to range the whole of physiology in the general phenomena of physics and chemistry, and chooses to give man too insignificant rather than too important a place in the series of existences.

It is one of the absolute criteria of Materialism that force and matter are not only conceived as inseparable, but that force is, in fact, conceived as a property of matter, and moreover, that from the interaction of matter and its forces all the forms of things are deduced. We may erect sensibility or perception into a principle, but it will still remain that sensibility itself, which thus gives the whole phenomenal world, is only the *mode* in which an existence, whose real properties we do not know, is affected by other existences. Or if, on the other hand, we define reality as coinciding with sensibility, we give up the proposition that things, perceived by beings of

different organs to our own, may appear different. And yet, if all philosophy is to be based as if Man were the only, indeed the only conceivable being of cultivated intellectual sensibility, —this is, of course, a deliberate self-limitation. Feuerbach is in this respect Hegelian, and at bottom favours with Hegel the principle of Protagoras; That man is the measure of things. Hence, he declares that sensations are to be regarded not merely as facts for the individual man, but as proofs of the objective reality of what they give. As to Religion, its only true and genuine province, regarded from the ground of Feuerbach's theory, is the actual being of humanity. Man has his highest source, his God in himself—in his very nature, or rather in that of his race. Whosoever rises to the love of the race, he is a *Christ*—nay, he is Christ himself, immediately that the consciousness of the race, as distinguished from his own personality, arises in him. The ecclesiastical Christ then disappears, and the real being of Christ takes its place.

Contemporaneously with Feuerbach, Auguste Comte was trying, in Paris, to assert his own new doctrine. Comte speaks of three epochs of humanity. The first is the Theological, the second the Metaphysical, the third and last is the Positive: *i.e.* that in which man applies himself solely to reality in the common meaning of the term, and finds his satisfaction in the resolution of actual problems. In common with Hobbes, he places the aim of all science in the knowledge of the laws that regulate phenomena. To see, in order to foresee; to inquire what is, in order to conclude what will be, is for him the task of philosophy. The mind must relinquish attempts to penetrate into the essence of things, to transcend the sphere of experience, and pass into that of causes, first and final. Its aim is to explain the *how*, and leave unexplored the *why*. It must establish by observation and induction the Laws, or constant relations, and resign itself to ignorance of the Agents. In a word, humanity must now close the door of that avenue into which the greatest as well as the commonest minds of all generations so longingly peer. The philosophy which takes the view that sensation, emotion, ideation, are not directly functions of an organism, but are the activities of an entity living within the organism, a life within a life, having, with the organism it inhabits, only points of contact, none of community, must give place, Comte tells us, to the Positive philosophy, which neither affirms nor denies the existence, origin, and end, of things inaccessible to the constitution of our

faculties. Every man may indulge in any phantasies he pleases—this is not philosophy. It is of no use asking for better bread than can be made of wheat. The limitations of human knowledge may be irksome to some impatient spirits, but philosophy pretending to no wider sweep than that of human faculty, and contented with the certainties of experience, declares the search after first and final causes to be a profitless pursuit.

In Comte's later speculations, he sought a transformation of his philosophy into a religion. This religion, evolved solely from human nature, excludes supernatural agencies as fictions, and is a religion of humanity. Society and man's social impulse is the ground work of it. Altruism, or the good of others, does not flow spontaneously like a passion from the heart, but experience shows the moral duty of it in all nobly-organised communities.

Materialism, however, derived its chief support, not from speculative theories, but from the development of industrial activity. Chambers of commerce, polytechnic institutes, the influence of railways—everything practical fostered it. After Liebig at Giessen had secured the first laboratory at a German university, and as one able chemist after another issued from Giessen, the other universities in Germany saw themselves obliged to follow the example that had been set. The inquiries of Flourens, Magendie, Leuret, Longet in the field of physiology of the brain attracted much attention. Quetelet, a Belgian astronomer and statistician, endeavoured in his work on Man to supply a natural theory of human action based upon figures. The application, in Germany, of a cool and strictly rational criticism to the Bible and to ecclesiastical history were among the signs of the new age. Congresses, associations, with their periodical assemblies, excursions, and co-operative action, developed a new social power. Trade activity followed suit. Collieries, Ironworks, Manufactures of textile fabrics, and other industries spread themselves over civilised Europe. Railways and shipping increased the transport and exchange of goods by land and sea. Practical Materialism became so far the ordinary habit of mind in the well-to-do classes, as to cause these in some measure to cease to think of that infinite realm, to wander through which refreshes the mind and ennobles it. Philosophy, it was held by the higher educated, could only proceed safely upon the line of the natural sciences, and an expectation became entertained that the materialistic view of

nature, with all the knowledge that supports it, was enough to eradicate those religious and superstitious notions to which mankind inclines for reasons that have their roots deeper than the materialistic view of things. The teaching of Kant, that all knowledge arises from the reciprocal action of Subject and Object, the one supplementing the other, from which follows that the phenomenal world is not the mere product of our conception according to Berkeley and Leibnitz, nor yet an adequate picture of actual things, but is a result of objective influences and of the subjective shaping of them—was put into the background. That sharp and perfectly clear Kantian stand-point that human knowledge is only a small island in the vast ocean of all possible knowledge, that we know everything only in relation to ourselves, that ideas do not order themselves in accordance with things, but things in accordance with our ideas,—was ignored by postulating the identity of the thing perceived with the thing-in-itself.

One only of the modern Materialists has attempted a really systematic solution of the difficulties that present themselves against this postulate. Czolbe, in his "New Exposition of Sensationalism," (1855), undertook, if not to demonstrate, at least to render probable, the agreement of the real world with the world of our senses. He begs the question by excluding the existence of the super-sensuous. His basis lies in the ethic: Content thyself with the world that is given thee. Czolbe derives conscience and morality from the *goodwill* which necessarily develops itself in the intercourse of man with man. The so-called moral needs, arising from dissatisfaction with our earthly life, might, he considers, just as properly be called immoral: that it is no proof of humility, but rather of arrogance and vanity, to improve upon the world we know by imagining a super-sensuous world, and to wish to exalt man into a creature above nature by the addition of a super-sensuous part. Czolbe died in 1873. A posthumous work of his is expected.

Materialism, resting as we see, always upon nature, must take its stand upon scientific research. But, after its empirical explorations, Philosophy recommences her work upon the results collected, and once more attempts a constructive theory of the whole. To come to a thorough explanation of the scattered facts in a common relation between them is the only way in which the Materialist can claim a permanent place in the his-

tory of Philosophy. And again and again we are brought face to face with the fundamental question of the relativity and limitation of our knowledge of things.

In a lecture delivered by Du Bois-Reymond at the meeting of the German Scientific and Medical Association at Leipzig in 1872, "On the Limits of the Knowledge of Nature," this salient point in the whole criticism of Materialism was much discussed. All knowledge of nature was pronounced to have in its ultimate aim the mechanism of Atoms. What conceivable connection exists between certain movements of certain atoms in my brain on the one hand, and on the other the to me original and not further definable, but undeniable facts "I feel pain, feel pleasure; take something sweet, smell roses, hear sounds, see something red," and so on? It is impossible to see how from the co-operation of the atoms consciousness can result. Even if I were to attribute consciousness to the atoms, that would neither explain consciousness in general, nor would that in any way help us to understand the unitary consciousness of the individual. We are not in a position to conceive the objective atoms, and we are unable from the atoms and their motion, to explain the slightest phenomenon of consciousness. No conceivable progress in the sciences can help us to get over this. But nevertheless, the man of science will not be discouraged in his attempts to form as long a string of induction as he can in the relations of spirit and matter. He sees in a thousand cases that material conditions influence the intellectual life. He sees the human mind grow, as it were, with the brain. He sees in the lower animals an order of development related to the development of man. Finally, the evolution theory in connection with the doctrine of natural selection suggests to him the idea that Mind has arisen as the gradual result of certain material combinations, and perhaps, like other hereditary endowments that are useful to the preservation of the individual in the struggle for existence, has advanced and perfected itself through an innumerable series of generations.

One of the ablest representatives and most powerful writers of this school in England is Thomas Huxley, in whose work "Evidence as to Man's Place in Nature," (Williams and Norgate, 1863) the inquiry is made—

"Is he (Man) something apart? Does he originate in a totally different way from Dog, Bird, Frog, and Fish, thus justifying those who assert him to have no place in nature

and no real affinity with the lower world of animal life? Or does he originate in a similar germ, pass through the same slow and gradually progressive modifications,—depend on the same contrivances for protection and nutrition, and finally enter the world by the help of the same mechanism? The reply is not doubtful for a moment, and has not been doubtful any time these thirty years. Without question, the mode of origin and the early stages of the development of man are identical with those of the animals immediately below him in the scale:—without a doubt, in these respects, he is far nearer the Apes, than the Apes are to the Dog.” (p. 65.)

“There would remain then, but one order for comparison, that of the Apes (using that word in its broadest sense), and the question for discussion would narrow itself to this—is Man so different from any of these Apes that he must form an order by himself? Or does he differ less from them than they differ from one another, and hence must take his place in the same order with them?” (p. 70)

“The whole analogy of natural operations furnishes so complete and crushing an argument against the intervention of any but what are termed secondary causes in the production of all the phenomena of the universe, that, in view of the intimate relations between Man and the rest of the living world; and between the forces exerted by the latter and all other forces, I can see no excuse for doubting that all are co-ordinated terms of Nature’s great progression, from the formless to the formed,—from the inorganic to the organic—from blind force to conscious intellect and will.” (p. 108)

“I have endeavoured to show that no absolute structural line of demarcation, wider than that between the animals which immediately succeed us in the scale, can be drawn between the animal world and ourselves; and I may add the expression of my belief that the attempt to draw a psychical distinction is equally futile, and that even the highest faculties of feeling and of intellect begin to germinate in lower forms of life. At the same time no one is more strongly convinced than I am of the vastness of the gulf between civilized man and the brutes; or is more certain that whether *from* them or not, he is assuredly not *of* them. No one is less disposed to think lightly of the present dignity or despairingly of the future hopes of the only consciously intelligent denizen of this world.” (p.p. 109-110)

“Our reverence for the nobility of manhood will not be lessened by the knowledge that Man is, in substance and in

structure, one with the brutes ; for he alone possesses the marvellous endowment of intelligible and rational speech, whereby, in the secular period of his existence, he has slowly accumulated and organized the experience which is almost wholly lost with the cessation of every individual life in other animals ; so that now he stands upon it as on a mountain top, far above the level of his humble fellows, and transfigured from his grosser nature by reflecting, here and there, a ray from the infinite source of truth." (p. 112)

"*From the infinite source of truth !*" That is a rather different expression to the one quoted a few lines further back from the same work, in which the writer "can see no excuse for doubting that all (forces) are co-ordinated terms of Nature's great progression, from the formless to the formed—from the inorganic to the organic—from *blind force to conscious intellect and will.*"

Admitting, however, the drift of all the evidence as to the identity and community of Man's bodily organisation with that of the lower forms of animal life, admitting even to the fullest extent, for the sake of the argument, the doctrine of the evolution of Man from amorphous matter,—this does not prove, it does not even *tend* to prove the materialistic doctrine of the production of the purposeful from the unpurposeful, or that "conscious intellect and will" are slowly evolved from an unconscious Power. It is obvious that the highest human organism is more closely allied to that of the brutes than most people like to think. It is equally true that it is much further removed than is commonly experienced. Man is separate from the brute in this : he does what they never do ; he creates. Whatever may be shown of the close physical relationship of Man to the lower animals, we do not perceive that these exhibit, as man does, a god-like faculty in his Thought Volition, and Language ; in his Deeds, his inexhaustibly diversified Arts,—reaching, in their highest form, to actual creativeness in Music and Poetry ; in Architecture, Sculpture, and Painting. These yield the plain witness of an endowment in Man that goes beyond a mere animal organisation or blind force, and any view of mankind which does not take this into account is clearly an inadequate one, nor is there the least reason to apprehend its ultimate prevalence. The permanent hold upon the human mind possessed by the ancient writings of the Eastern races, and especially by those of the Hebrew and the Greek, shows that a relationship to an unseen Conscious Power underlies the most cherished conceptions of humanity.

It is nevertheless a distinguishing feature of Huxley's contributions to literature that he fully recognises both Kant's principles as well as Hume's—the relativity of human knowledge so clearly set forth by the one, and its uncertainty as shown by the other. He conceives Berkeley's reasoning that matter and motion are known to us only as forms of consciousness to be irrefragable.* “For, after all, what do we know of this terrible ‘matter,’ except as a name for the unknown and hypothetical cause of states of our own consciousness? And what do we know of that ‘spirit’ over whose threatened extinction by matter a great lamentation is arising, like that which was heard at the death of Pan, except that it is also a name for an unknown and hypothetical cause, or condition, of states of consciousness? In other words, matter and spirit are but names for the imaginary substrata of groups of natural phenomena. And what is the dire necessity and ‘iron’ law under which men groan? Truly, most gratuitously invented bug-bears.” †—“‘Necessary’ means that of which we cannot conceive the contrary. ‘Law’ means a rule which we have always found to hold good.” ‡—“But when, as commonly happens, we change *will* into *must*, we introduce an idea of necessity which most assuredly does not lie in the observed facts, and has no warranty that I can discover anywhere. For my part, I utterly repudiate and anathematize the intruder. Fact I know, and Law I know, but what is this Necessity, save an empty shadow of my own mind’s throwing. . . . Why trouble ourselves about matters of which, however important they may be, we do know nothing, and can know nothing? We live in a world which is full of misery and ignorance, and the plain duty of each and all of us is to try and make the little corner he can influence somewhat less miserable and somewhat less ignorant than it was before he entered it. To do this effectually it is necessary to be fully possessed of only two beliefs: the first; that the order of nature is ascertainable by our faculties to an extent which is practically unlimited; the second, that our volition counts for something as a condition of the course of events. Each of these beliefs can be verified experimentally, as often as we like to try. . . . In itself it is of little moment whether we express the phenomena of matter

* Critiques and Addresses. *Bishop Berkeley on the Metaphysics of Sensation.* Macmillan & Co., 1873, p. 347.

† Lay Sermons, &c. *On the Physical Basis of Life.* Macmillan & Co., 1877, p. 143.

‡ Do. *On Descartes’ ‘Discourse.’* Macmillan & Co., 1877, p. 340.

in terms of spirit ; or the phenomena of spirit in terms of matter : matter may be regarded as a form of thought, thought may be regarded as a property of matter—each statement has a certain relative truth.”*

It is impossible not to recognise in these and other passages of the writings of Huxley a different strain to what we are accustomed from the genuine Materialist. In his latest work, “Hume,” one of the *English Men of Letters* series, he says—“The feeling of obligation to be just, or of the duty of justice, arises out of that association of moral approbation or disapprobation with one’s own actions, which is what we call conscience. To fail in justice, or in benevolence, is to be displeased with oneself. But happiness is impossible without inward self-approval ; and hence every man who has any regard to his own happiness and welfare, will find his best reward in the practice of every moral duty. . . . In whichever way we look at the matter, morality is based on feeling, not on reason ; though reason alone is competent to trace out the effects of our actions and thereby dictate conduct. . . . The moral law, like the laws of physical nature, rests in the long run upon instinctive intuitions, and is neither more nor less ‘innate’ and ‘necessary’ than they are. . . . While some there may be, who, devoid of sympathy, are incapable of a sense of duty. . . . such pathological deviations from true manhood are merely the halt, the lame, and the blind of the world of consciousness. . . . And as there are Pascals and Mozarts, Newtons and Raffaelles, in whom the innate faculty for science or art seems to need but a touch to spring into full vigour, and through whom the human race obtains new possibilities of knowledge and new conceptions of beauty : so there have been men of moral genius, to whom we owe ideals of duty and visions of moral perfection, which ordinary mankind could never have attained ; though, happily for them, they can feel the beauty of a vision, which lay beyond the reach of their dull imaginations, and count life well spent in shaping some faint image of it in the actual world.”†

In Germany, so long the home of metaphysics, the philosophic movement has for some time past been decidedly materialistic, and this without those reservations which we

* Lay Sermons, &c. *On the Physical Basis of Life*, p.p. 144-146.

† Macmillan and Co., 1879, p.p. 204-208.

have noticed as characteristic of one of the foremost writers of this school in England. Moleschott (1852) admits no realities but matter and force. All the phenomena of mind he relegates to the changes of matter. We know matter only through its properties, and never know any properties in the absence of matter. Force and matter are inseparable. There is no matter without force, no force without matter. Force is the dynamical aspect of matter; matter the statical aspect of force.

All this, however, is but mere change of phrasing; and we are not a whit nearer to an understanding of the subject than is to be found in the ancient formula of Democritus: "The world consists of atoms and empty space." With the advance of science we become ever more certain in our knowledge of the *relations* of things, and ever more uncertain as to the subject of these relations. Experience, the domain of verifiable knowledge, has been shown to be an insufficient criterion herein, though it is clear that we cannot get beyond the circle of experience. Thus it has turned out to be the task of philosophy, as of mathematics, not to square the circle, but to show that it cannot be squared. Why is the law of the persistence of force so incomparably more important than the law of the persistence of matter, which Democritus enunciated, and which, as the "indestructibility of matter" plays so important a part with our modern Materialists? Matter is everywhere the unknown, force the known, element. If instead of force, we rather, talk of a "property of Matter," we must beware of logomachy. We know experientially nothing but properties and their concurrence in an unknown something, the assumption of which *comes from our mind*, though, it would seem, an assumption made necessary and imperative by our organisation. We perceive only forces, but we demand a permanent representative of these changing phenomena, a substance. Forces are properties of our perceptions *plus* something else.

The true element in Materialism is the exclusion of the miraculous and arbitrary in the nature of things; the objectionable element, the erection of Matter, as we know it, into the principle of all that exists. The dogmatism of the German Materialists may be said to be now represented by Ernst Haeckel, professor in the University of Jena. In his "History of Creation: or the Development of the Earth and its Inhabitants by the action of Natural Causes" (King and Co., London, 1876), and "Evolution of Man" (Kegan Paul and Co., London, 1879), he,

following on the track of Darwin, affirms that all organisms are derived from one single, or from a few simple original forms, and that they have developed themselves from these in the natural course of a gradual change. Creation, as the *coming* into existence of matter, is a process, if indeed it ever took place, that is completely beyond human comprehension, and can therefore never become a subject of scientific inquiry. Natural science teaches that matter is eternal and imperishable, for experience has never shown us that even the smallest particle of matter has come into existence or passed away.

It will be observed that Haeckel really here postulates the eternity and imperishability of matter, for the teaching of natural science, limited as it is to the domain of experience, or verifiable knowledge, amounts on these points to mere zero. It is obvious, therefore, in Haeckel's view that the existing *quantity* of matter in the universe is a given fact and can never become either more or less.

In nature, he conceives "purposiveness" no more exists than the much talked of "beneficence" of the Creator.* Everywhere, we find a pitiless struggle of all against all. Passion and selfishness,—conscious or unconscious,—is everywhere the motive force of life. The idea of the unity of organic and inorganic life is now firmly established. The distinction which has been made between animate and inanimate bodies does not exist. All knowledge springs from sensuous perceptions. In our late animal ancestors, all our so-called "*à priori* knowledge" was originally acquired *à posteriori*, and only gradually became *à priori* by inheritance.

Haeckel admits, but does not dwell sufficiently on the point, that as sensuous experience is the source of *all* knowledge, that therefore our knowledge is limited, and we can never apprehend the first causes of any phenomena.

As to the origin of life, his hypothesis is that of spontaneous generation, and he mentions Aristotle, one of the grandest geniuses of all time, as holding this theory. He quotes Goethe as saying (1807)—"If we consider plants and animals in their most imperfect condition, they can scarcely be distinguished. But this much we can say, that the creatures which by degrees emerge as plants and animals out of a common phase where

* Oersted (*Soul in Nature*, Bohn, 1852) remarks on this point that the difficulties of reconciling a beneficent Providence with the outbursts of maleficence in Nature towards all life is only part of the same problem as those moral aberrations, the grounds of which we perceive to exist in our human constitution; and that in this respect Man and Nature are alike.

they are barely distinguishable, arrive at perfection in two opposite directions; so that the plant in the end reaches its highest glory in the tree, which is immovable and stiff; the animal in man, who possesses the greatest elasticity and freedom." Oken, he says, in 1802, had propounded that the phenomena of life in all organisms proceeded from a common chemical substance, which he designated by the name of *Urschleim* or original slime; and that this primitive slime originated in the sea from inorganic matter in the course of planetary-evolution. Man's descent from lower organisms was likewise asserted, and thus, by Oken—"Man has been developed, not created."

Lamarck's "Philosophie Zoologique" (1809) is the first connected exposition of the Theory of the Descent of Man, and Haeckel quotes these passages of that work—"The systematic divisions of classes, orders, families, genera, and species, as well as their designations, are the arbitrary and artificial productions of man. The kinds or species of organisms are of unequal age, developed one after the other, and show only a relative and temporary existence; species arise out of varieties. The differences in the conditions of life have a modifying influence on the organisation, the general form, and the parts of animals, and so has the use or disuse of organs. In the first beginning only the very simplest and lowest animals and plants came into existence; those of a more complete organisation only at a later period. The course of the earth's development, and that of its organic inhabitants, was continuous, not interrupted by violent revolutions. Life is purely a physical phenomenon. All the phenomena of life depend upon mechanical, physical, and chemical causes, which are inherent in the nature of matter itself. The simplest animals and the simplest plants, which stand at the lowest point in the scale of organisation, have originated and still originate by spontaneous generation. All animate natural bodies or organisms are subject to the same laws as inanimate natural bodies or anorgana. The ideas and actions of the understanding are the motional phenomena of the central nervous system. The will is in truth never free. Reason is only a higher degree of development and combination of judgments."

These far reaching views, Haeckel goes on to say, had been expressed by Lamarck fifty years before Charles Darwin completed Lamarck's Theory of Descent, by the addition of the important principle of the Origin of Species by Natural Selec-

tion in the Struggle for Existence, and the Law of the Survival of the Fittest. Geoffroy St. Hilaire had adopted Lamarck's Theory, but to Charles Darwin belongs the especial merit of developing this Theory, and by the establishment of his own, revealing to us the acting causes of organic form-production, and of the changes and transformations of animal and vegetable species. This is the theory which is called the Theory of Natural Selection, and is especially the Darwinian Theory. In a letter from Darwin to Haeckel, dated October 8th, 1864, the first-named states that "I was prepared from having studied the habits of animals, to appreciate the Struggle for Existence, and my work in geology gave me some idea of the lapse of past time. Therefore, when I happened to read 'Malthus on Population,' the idea of Natural Selection flashed upon me." (*Hist. of Creation*, Vol. 1, p. 134).

The "Struggle for Existence" has rapidly become a watch-word. Darwin's Theory of the Struggle for Life is, to a certain extent, a general application of Malthus's Theory of Population to the whole of organic nature. It had been shown in the work of Malthus, that the number of human beings naturally increases in geometrical progression, while food increases only in an arithmetical progression. Destructive agencies readjust these two proportions. So also throughout the organic world by far the greater number of germs perish in the earliest stages of life, and it is only the strongest organisms which survive and finally succeed in propagating themselves. Every organism, from the commencement of its existence, struggles with a number of hostile influences; struggles against other animals which feed and prey upon it; struggles against inorganic influences of the most varied kinds, against temperature, weather, and other manifold circumstances, and it struggles, above all, against organisms most like and akin to itself. Thus does this great competition go on ceaselessly among human beings and animals as well as among plants. The hardiest and best equipped come to the front, survive, and transmit their qualities to their successors. Each generation in turns renews the struggle; the fight goes constantly on for the perpetual improvement and advancement of the race. By these causes new species of animals and plants have arisen out of existing species; by this simple mechanism, their endless variety. "Thus, from the war of nature, from famine and death, the most exalted object we are capable of conceiving, namely, the production of the higher animals, directly follows. There is

grandeur in this view of life, with its several powers, having been originally breathed by the Creator into a few forms or into one; and that, whilst this planet has gone cycling on according to the fixed law of gravity, from so simple a beginning endless forms most beautiful and most wonderful have been, and are being evolved." (Darwin, *Origin of Species*, 6th edition, 1878. Conclusion.)

It is to be noticed however, that Darwin, in this last edition, remarking upon misrepresentations of his views, calls attention to the following words at the close of the Introduction of the first edition of this work—"I am convinced that Natural Selection has been the main but not the exclusive means of modification" (p. 421). With regard to the origin of life and the hypothesis of spontaneous generation, Haeckel observes that Darwin passes over and avoids this subject, as he expressly remarks that he (Darwin) has "nothing to do with the origin of the soul, nor with that of life itself." (*Hist. of Creation*, Vol. 1, p. 317).

This we see that Darwinism is not without affinity to the system of Hobbes. And it overlooks the import of the fact that the better minds of humanity do not engage in the internecine "struggle" for existence, and that the highest minds have, on the contrary, ever devoted their lives to the service of their race.

Haeckel's materialistic philosophy is much the same as that of La Mettrie and Holbach, but supported by a vast display of anatomical and physiological evidence, as to the unity of all animal life. From this evidence, he derives the conclusion that the soul of man, just as the soul of animals, is a purely mechanical activity, transmitted by inheritance. The will, as well as the other mental activities, in higher animals, is different from that of men only in quantity, not in quality. The will of the animal, as well as that of man, is never free. The widely spread dogma of the freedom of the will is, from a scientific point of view, altogether untenable. Every physiologist who scientifically investigates the activity of the will in man and animals, must of necessity arrive at the conviction that in reality the will is never free, but is always determined by external or internal influences. The adaptability of man, as in all other animals, is unlimited, and since it is manifested in him, above all other animals, in the modifications of the brain, there can be absolutely no limit to the knowledge which man in a further progress of mental cultivation may not be able to exceed. The human mind, according to the law of unlimited adaptation, enjoys an infinite perspective of becoming ever more and more perfect.

In Haeckel's view, if we do not accept the hypothesis of spontaneous generation, we must have recourse to the miracle of a supernatural creation, and betake ourselves to the only remaining scientific hypothesis—that of a supernatural creation of the first, or a few first organisms, and giving them the capability of developing further in a purely mechanical way. He does not hesitate, therefore, to assume the hypothesis of spontaneous generation as by far the more rational of the two, as everywhere supported by the facts, and, linked with the Theory of Development or Descent, as making *all* biological phenomena,—all botanical and zoological series of phenomena intelligible in their relations to one another.

Commencing then with the simplest of all organisms yet known, and which, at the same time, are the simplest imaginable organisms—these are the *Monera* living in water. The entire body of one of these *Monera*, during life, is nothing more than a shapeless, mobile, little speck of mucus or slime, consisting of an albuminous combination of carbon, at most as large as a pin's head. The most remarkable of all *Monera* was found by Huxley in the depths of the Atlantic Ocean in the year 1868, who gave to the substance the name of *Bathybius Haeckelii*;—"bathybius" meaning living in the deep. The *Monera* propagate themselves asexually, by fission or self-division. These *Monera* come into existence by spontaneous generation from primitive slime, which is the oldest material substance in which all vital activities are embodied. They develop further into *nucleus* and *protoplasma*. By various stages, all of which are noticed by Haeckel, the lowest vertebrate animals come into existence, till we reach the Anthropoid Apes, from which finally Man is developed.

These propositions are supported by a wide extent of anatomical and physiological demonstration, in which the facts of embryology are clearly illustrated and displayed, in proof of the common physical origin of all animals. Man is at the beginning of his individual existence a simple egg, a single little cell, just the same as every animal organism which originates by sexual generation. The human egg is essentially the same as that of all other mammals, and cannot be distinguished from that of a dog, a horse, or any other mammal. The differences do not consist in the form, but in the chemical mixture of the molecular composition of the albuminous combination of carbon, of which the egg essentially consists. At the first stage of development into the embryo, not only all

mammals, including man, but even all vertebrate animals in general—birds, reptiles, amphibious animals, and fishes—can either not be distinguished from one another at all, or only by very unessential differences, such as the arrangement of the egg-coverings.

The physiological department called Embryology is, of course, very much dependent upon identifying the modes of growth of creatures considerably different from one another, as the chicken with the infant. But, as Alexander Bain observes with respect to the Law of Similarity in such cases—"Here, however, there was no great reach of mind needed to suggest the identity of these two; the difficulty in such a case is to prove that an obvious and apparent identity is real and deep, or so close that what is known of the one member of the comparison may, with absolute certainty, be believed of the other. Whereas in other instances the discovery is difficult, but the proof easy; in this the discovery is easy, but the proof difficult." *

With regard to the origin of the human mind or the soul of man, Haeckel points out—as Swedenborg had, in effect, done before him—that we perceive that in every human individual it develops from the beginning step by step and gradually, just like the body. In a newly born child, we see that it possesses neither an independent consciousness, nor, in fact, clear ideas. These arise only gradually when, by means of sensuous experience, the phenomena of the outer world affect the central nervous system. But still the little child is wanting in all these differentiated emotions of the soul which the full-grown man acquires only by the long experience of years. Like all other functions of organisms, the human soul must have historically developed, and can only be conceived of as a gradual evolution from the soul of vertebrate animals. And, even now, between the most highly developed animal souls, and the lowest developed human souls, there exists only a small quantitative but no qualitative difference, and this difference is much less than the difference between the lowest and the highest human souls, or than the difference between the highest and the lowest animal souls.

Finally, Haeckel sums up the results of Lamarck's and Charles Darwin's teaching as having "enabled us to substitute everywhere unconscious causes acting from necessity, for conscious purposive causes." (*Evolution of Man*, vol. 1, pp. 17, 85.)

* *The Senses and the Intellect*, Parker, 1855, p.p. 503-504.

How *necessity*, however, can be related to *unconscious causes* is difficult to think. There is a yawning chasm in the statement that is not bridged. The value of Haeckel's works appears to consist in the large number of scientific facts they contain; their weakness, in pronouncing dogmatically upon metaphysical questions of a Final Cause and the Freedom of the Will, which lie altogether outside the range of empirical inquiry. His postulate of spontaneous generation is equivalent to the proposition that the cause of a thing is the thing itself.

The doctrine of the Evolutionist that man has been produced from lower animal stages by perfecting processes extending through an innumerable series of generations may be contrasted with the opposite view: That man also lapses into inferior stages of life. Can nothing be said for this? Assuredly, even in this life, we perceive that individual men degrade their nature and themselves, as well as we perceive instances of advancement, and of dull oscillation. The pendulum, however, keeps in motion, till death intervenes. From conduct, which is the off-spring of the will, flow day by day the issues that make the future. As a constant change goes on with the body, so a correspondent change takes place in man's inner being. This is a fact which any thoughtful man can verify for himself. And may not the life-spirit put on different garments at successive stages of existence, having relation to the preceding stage? Nature, says Goethe, is the open secret, and it needs no powerful microscope to perceive some significance in the physiognomy of the death's-head moth. And if the organism that once was part of an Alexander may ultimately be traced in the stopping of a bung-hole, can we be sure that the transformations of life are always in the higher direction? In short, may not the Theory of Descent be from Man to the Monkey? Or, not to go quite so far, is it not probable that savages are degraded forms of humanity, as that civilized man is an elevated form?

The Material World is known only through our perceptions, and the consequences of this carry us far beyond Materialism. Idealism is, in its very nature, metaphysical speculation. The circumstance that an imaginative creative

impulse is contained in our breasts, which in Philosophy, Art, and Religion, can produce creations which the noblest and soundest of men hold higher than mere knowledge,—this circumstance of itself points to the fact that Idealism too is connected with the unknown truth, although in a very different way, from Materialism. That some partial form or aspect of the unknown truth has always prevailed, is discernible in the long survey of the past which history gives. To each generation are given interpreters of the Universal Mind. To think otherwise is to deny an Intelligent government of the Universe. Our ideas, our imaginations or brain-fancies, are products of the same nature which produces our sense-perceptions and the judgments of our understanding. They do not arise in the mind irregularly and unexpectedly, but they are products of the same psychological process in which our sensible perceptions likewise play their part. The roots of this world of intellectual values run back just as much as the roots of our sense-perceptions into the inmost nature of man, which is withdrawn from our observation and analysis. And “religious feeling is as much a verity as any other part of human consciousness; and against it, on its subjective side, the waves of science beat in vain.”*

If it be conceded that our knowledge, after all, is merely relative, then is the provisional character of it at once determined. “The mice that inhabit the holes of some immense building know not whether it is eternal, nor who the architect, nor why he built it. Such mice are we:—the Divine Ruler has not confided his purposes so far as I see, to any one.” So Voltaire wrote to Frederick of Prussia in the days of their mutual philosophising. And indeed, grounds are not wanting for inferring, both from reason and observation, that the world is neither eternal nor incorruptible. The continual and rapid motion of matter, the violent convulsions by which parts of it are agitated, the changes remarked in the heavens, the plain traces of past changes in the earth,†—all these rather argue

* J. Tyndall, *Nineteenth Century*, Nov. 1878, p. 810. Art: *Virchow and Evolution*.

So also Bishop Thirlwall: *Remains: Relation between Science and Literature*, vol. 3, p. 300—“for we are on ground where, to use the lawyer’s phrase, the writ of Science does not run.”

† “If the nebular hypothesis of astronomers be true (and I know of no reason why it should be doubted) the earth was at one time in a purely gaseous state, and afterwards in a fluid condition, attended by intense heat. By-and-by consolidation, due to partial cooling, took place on the surface, and as radiation of heat went on the outer shell thickened. Radiation still going on, the interior

the mortality of this fabric of the world, and the probability of its passage, by corruption or dissolution, from one state or order to another :—

“like the baseless fabric of a vision,
The cloud-capped towers, the gorgeous palaces,
The solemn temples, the great globe itself,—
Yea, all which it inherit,—shall dissolve,
And, like an unsubstantial pageant faded,
Leave not a rack behind.”

As to its origin, whether by fiat or evolution, the latter mode is as wonderful and as incomprehensible as the former. The existence or genesis of Atoms, containing the productive power—“the promise and potency of all terrestrial life”^{*}—is not easier to conceive than the genesis of a universe. The one is as great a mystery as the other. Trace back life to its physical basis ; you are not a whit nearer to the cause or origin of the power contained in the cell or protoplasm. There is, beyond doubt, a point in physics at which the mind comes face to face with the unknowable, no less sure than in metaphysics and theology. A *First* cause, which implies the prior existence of time or space, is a negation of terms ; in one sense, is unthinkable. And yet the beginning of anything cannot be conceived except as occurring in time and as envired by space. But an absolute cause has no beginning ; is unconditioned. The human mind is unable to move in reasoning without postulating *some* cause, which itself is uncaused. For a cause which acts under conditions is not a cause at all. Such mental operations are, and have always been found, interminable—insoluble. The reasoning faculty travels continually round and round its own circumference, and finds neither beginning, nor end, nor outlet from its circumscription. To *know* more, we must *be* more.

Veiled in mystery—the multifarious evolutions of nature and consciousness ; of life and the never-ceasing resurrections of life upon this planet ; the domain of consciousness itself, as to whether the growths and phenomena of the whole organic world do not possess their own proper forms of it ;

fluid matter decreased in bulk, and, by force of gravitation, the outer shell being drawn towards the interior, gave way, and, in parts, got crinkled up ; and this, according to cosmogonists, was the origin of the earliest mountain chains. I make no objection to the hypothesis, which, to say the least, seems to be the best that can be offered, and looks highly probable.” *Prof. Ramsay's Address, delivered at Swansea, 1880, as President of the British Association for the Advancement of Science.*

^{*} Tyndall's *Belfast Address*, 7th thousand, p. 55.

the reconciliation of "fixed fate, free-will, fore-knowledge, absolute"; the co-ordinate destinies of the countless other worlds, moving,—without haste, without rest—everywhere around us; the marvellous and gorgeous frame of the universe; the awful infinitudes of time and space, at the contemplation of which the mind shrinks back upon itself, seeking a refuge as it were, in its own little absoluteness—these are the impenetrable mysteries and inscrutable secrets of Being. To what purposes and intentions they are guided is beyond the vision of the children of men. Sense sees not; mind knows not. But human consciousness and nature herself, the world within and the world without, an ever-present Shekinah,—continually reveal to generation after generation the All-Sustaining Power. *Securus judicat orbis terrarum.*

When Materialism shall come to say its last word, if there be one, then will arise from thought the vast forms of Space and Time—Infinity, Eternity. As to which, let us, by way of conclusion, take leave of our subject with the words of Thomas Carlyle :—

"That the Thought-forms, Space and Time, wherein, once for all, we are sent into this world to live, should condition and determine our whole practical reasonings, conceptions, and imagings or imaginings, seems altogether fit, just, and unavoidable. But that they should, furthermore, usurp such sway over pure spiritual meditation, and blind us to the wonder everywhere lying close on us, seems nowise so. Admit Space and Time to their due rank as Forms of Thought; nay, even, if thou wilt, to their quite undue rank of Realities. . . . Is the Past annihilated then, or only past; is the Future non-extant, or only future? Those mystic faculties of thine, Memory and Hope, already answer: already through those mystic avenues, thou, the Earth-blinded, summonest both Past and Future, and communest with them, though as yet darkly, and with mute beckonings. The curtains of Yesterday drop down, the curtains of To-morrow roll up; but Yesterday and To-morrow both *are*. Pierce through the Time-element, glance into the Eternal. Believe what thou findest written in the sanctuaries of man's soul, even as all thinkers, in all ages have devoutly read it there: that Time and Space are not God, but creations of God; that with God as it is a universal Here, so is it an everlasting Now. . . . Know of a truth that only the Time-shadows have perished, or are perishable; that the real Being of whatever was, and

whatever is, and whatever will be, is even now and forever. This, should it unhappily seem new, thou mayest ponder at thy leisure; for the next twenty years, or the next twenty centuries: believe it thou must, understand it thou canst not. . . . Sweep away the illusion of Time, and what are we? Are we not Spirits, that are shaped into a body, into an Appearance; and that fade away again into air and Invisibility? This is no metaphor, it is a simple scientific *fact*: we start out of Nothingness, take figure, and are Apparitions; round us, as round the veriest spectre, is Eternity; and to Eternity minutes are as years and æons. . . . Where now is Alexander of Macedon: does the steel Host, that yelled in fierce battle-shouts at Issus and Arbela, remain behind him; or have they all vanished utterly, even as perturbed goblins must? Napoleon too, and his Moscow retreats and Austerlitz campaigns! Was it all other than the veriest Spectre-hunt?—Ghosts! There are nigh a thousand-million walking the earth openly at noon-tide; some half-hundred have vanished from it, some half hundred have arisen in it, ere thy watch ticks once.”

“O heaven, it is mysterious, it is awful to consider that we not only carry each a future Ghost within him, but are, in very deed, Ghosts! These Limbs, whence had we them; this stormy Force; this life-blood with its burning passion? They are dust and shadow; a Shadow-system gathered round our ME; wherein, through some moments or years, the Divine Essence is revealed in the Flesh. That warrior on his strong war-horse, fire flashes through his eyes; force dwells in his arm and heart: but warrior and war-horse are a vision; a revealed Force, nothing more. Stately they tread the Earth, as if it were a firm substance: fool, the Earth is but a film; it cracks in twain, and warrior and war-horse sink beyond plummet’s sounding. Plummet’s? Fantasy herself will not follow them. A little while ago, they were not; a little while, and they are not, their very ashes are not.”

“So has it been from the beginning, so will it be to the end. Generation after generation takes to itself the Form of a Body; and forth issuing from Cimmerian Night, on Heaven’s mission APPEARS. What Force and Fire is in each he expends: one grinding in the Mill of Industry; one hunter-like climbing the giddy Alpine heights of Science; one madly dashed to pieces on the rocks of Strife, in war with his fellow:—and then the Heaven-sent is recalled, his earthly Vesture falls

away, and soon even to sense becomes a vanished Shadow. Thus, like some wild-flaming, wild-thundering train of Heaven's Artillery, does this mysterious MANKIND thunder and flame, in long-drawn, quick-succeeding grandeur, through the unknown Deep. Thus, like a God created, fire-breathing Spirit-host, we emerge from the Inane; haste stormfully across the astonished Earth; then plunge again into the Inane. Earth's mountains are levelled, and her seas filled up in our passage: can the Earth, which is but dead and a vision, resist Spirits which have reality and are alive? On the hardest adamant some foot-print of us is stamped in; the last Rear of the host will read traces of the earliest Van. But whence?—O Heaven, whither? Sense knows not, Faith knows not; only that it is through Mystery to Mystery, from God to God.”*

* Sartor Resartus.

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